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# Dr. Still's Conception of Disease

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## Part II.—Vaughan's Conception of Infection

VAUGHAN'S conception of infection* in a brief statement is somewhat as follows: All infectious agents, whether bacteria, protozoa, mold, or yeast, are living proteins capable of growth and multiplication. Pathogenic micro-organism are capable of utilizing the loose proteins in the blood-stream of the host for the purpose of multiplication. All living things feed through the activities of their ferments. Usually we say that cell ferments are extra-cellular and intra-cellular. The extra-cellular ferments break down the complex proteins into simpler compounds, while the intra-cellular ferments do constructive work by building the broken down proteins into living cells.

It must be remembered that body-cells like bacterial cells digest proteins. They also elaborate analytic and synthetic or extra-cellular and intra-cellular ferments. Every living cell in the animal body, like every bacterial cell, elaborates its own specific ferments. *This has been demonstrated positively by Abderhalden and his students.*

One very important thing that has been learned in recent years is that the ferments produced by the body-cells may be altered or modified under changed conditions, that is, the body-cells may be taught by experience to elaborate new or modified ferments. *Natural as well as artificial immunity is produced through this factor.*

When pathogenic micro-organism find entrance into human or animal bodies they multiply rapidly by feeding on the simple blood proteins of the host. This constitutes the period of incubation, provided the body-cells have had no previous experience with the particular micro-organism that has found entrance. If the body-cells have had previous experience with this particular micro-organism a body-cell ferment will immediately be elaborated, destructive to the micro-organism that has found entrance and no multiplication takes place. Within a certain time the body-cells become sensitized to the invading micro-organism and elaborate ferments, extra-cellular as well as intra-cellular, which are destructive to the specific micro-organism that has invaded the body, with the result that the complex bacterial protein is broken down into simpler forms by the newly elaborated body-cell ferments.

This constitutes the active period of infections. The symptoms present during the active period are produced by a poison molecule, liberated as the result of the cleavage or breaking down of the complex bacterial protein into simpler compounds. These simpler compounds are absorbed into the body-cells, and as all complex proteins, whether living or dead, contain a poison group, the greater the number of micro-organisms developed during the incubation period, the more protein poison will be liberated in the body as the result of bacterial protein cleavage and the severer will be the infection.

*Vaughan, Victor B. Journal of American Medical Association. February 21, 1914. The Phenomena of Infection.

When the body-cells dissolve the bacterial protein promptly it constitutes natural immunity. According to this hypothesis artificial immunity may be produced by educating the body-cells to elaborate specific ferments, destructive to micro-organisms for which immunity is desired, by introducing small doses of killed bacteria directly into the body. That this hypothesis has sound reasoning for its foundation must be admitted, that is, if it is conceded that all body-cells may be educated by experience.

When we further remember that we all approve of artificial aids to the outside body cells in the form of antiseptics, disinfectants, hygiene and sanitation, the next logical step in this direction would be to attempt to give artificial assistance to the body-cells inside of the body. That this offers a rich field for future investigation must be admitted by reason, even though the results have been disappointing to date. Dr. Vaughan speaks in words of praise for diphtheria and some other anti-toxines, as demonstrated accomplishments, but sounds a note of warning against much of the protein therapy now so largely employed, as without scientific justification.

The deductions derived from the above hypothesis emphasize the fact that in immunity to infections the preservation of the organism depends upon its reactive capacity in elaborating a suitable body-cell ferment destructive to the invading micro-organism, making immunity dependent upon body-cell activity, or the organism's relative capacity to microscopic enemies.

### Dr. Crile's Demonstrations

Crile* and his associates have further demonstrated that certain organs of the animal body undergo identical changes when the organism is subjected to infections, injuries, exertions, emotions, auto-intoxications or pregnancy. These organs are the nervous system, thyroid gland, supra-renal glands and the liver, and that these changes are not produced as the result of waste products in the blood stream, but are recognized as work changes.

The point that Dr. Crile desires to emphasize in this relation is that infections, injuries, exertions, emotions, auto-intoxications and pregnancy speed up the organism to a higher rate of metabolism, that this speeding-up process is accomplished through the increased activities of the nervous system, thyroid gland, supra-renal glands and liver, and that these internal changes are all preparatory for the production of heat and musculo-skeletal motion. Or in other words prepare the living organism for either flight or fight.

Here again we find corroborative evidence of the mechanistic theory of the human body in the similarity of the body's reactions to diversified dissimilar driving factors. To illustrate, infections, injuries, exertions, emotions, auto-intoxications or pregnancy drive the body to intensified functional activities, with an effect similar to when an engineer advances the spark and throttle of an engine. When the engine's spark and throttle are advanced the machine increases its speed, likewise the consumption of its intake of fuel, air and water. When the human organism is driven to higher speed of metabolism as the result of infections, injuries, exertions, emotions, auto-intoxications or pregnancy, respiration is increased, circulation is increased, perspiration is increased, elimination of waste is increased, thirst is increased, all of which is evidence of increased combustion processes within the body, and confirmatory of the mechanistic theory of life and disease as promulgated by Dr. Still.

Again referring to Dr. Vaughan's theory of infections, wherein the emphasis for immunity is placed on the education of the body-cells to elaborate specific ferments destructive to the invading micro-organism, I desire to ask this question: Is it not a fact that the great majority of the infectious diseases are produced by micro-organisms in daily contact with our bodies, and if education of the body-cells is the *chief factor in immunity*, why is it that the body-cells have not acquired the faculty of elaborating promptly the specific ferment capable of dissolving the invading pathogenic micro-organism responsible for the common infections?

When Dr. Crile's theory is added to Dr. Vaughan's theory, wherein he demonstrates that histologic changes take place in the brain, thyroid, supra-renals and liver during infections, and that the changes found in

*Crile, George W. The Origin and Nature of the Emotions. W. B. Saunders Co. Man an Adaptive Mechanism. MacMillan Co.

these organs are work changes, does not the question of adaptation come prominently into play in infections, and may not the fundamental responsible factor for the body-cell failure in elaborating the necessary specific ferments, be due to fatigue, overwork, injury, strain from structural defects, in place of body-cell ignorance in elaborating the specific ferments?

## Dr. Vaughan's Hypothesis Regarding Modulation Treatment

In Dr. Vaughan's hypothesis the entire end and aim of the inoculation treatment is absolutely dependent upon the body-cell activity, by arousing latent faculties of body-cells into activity by the introduction of toxins of defenceless micro-organisms directly into the body by inoculation, and by this method developing new faculties in the body-cells or strengthening old ones. Here the question arises would the body-cells fail in the elaboration of necessary specific ferments if they were in a high state of nutritional efficiency? This question should be answered before accepting the Vaughan theory without question.

Quoting from Dr. Crile's Mechanistic Theory of Disease: "I postulate that the body *is* itself a mechanism responding in every part to the adequate stimuli given it from without by the environment of the present, and from within by the environment of the past, the memory of which is stored in the central battery of the mechanism—the brain. * * * Reaction to environment is the basis of conduct, of moral standards, of manners and conventions, of work and play, of love and hate, of protection and murder, of governing and being governed, in fact, of all the reactions of life. * * * On this basis we may see that the activities of life depend upon the ability of the parts of the body mechanism to respond adequately to adequate stimulation. * * * Questions regarding disease become therefore questions in adaptation, and it is possible that, when studied in the light of this conception the key to many hitherto unsolved physical problems may be found." These quotations are certainly to the point, and are further in perfect harmony with the fundamental principle of our profession, and how like the forceful utterances of Dr. Still.

Quoting from Crile's Kinetic System: "The self-preservation of man and kindred animals is effected through mechanisms which transform latent energy into kinetic energy to accomplish adaptive ends. * * * The principal organs which comprise the kinetic system are the brain, the thyroid, the adrenals, the liver and the muscles. The brain is the great central battery which drives the body; the thyroid governs the conditions favoring tissue oxidations; the adrenals govern immediate oxidation processes; the liver fabricate and stores glycogen, and the muscles are the great converters of latent energy into heat and motion."

In other words, Dr. Crile's theory might be stated in a few words in this manner: That the brain, thyroids, adrenals and liver are the internal organs which respond to the stimuli of infections, injuries, exertions, emotions, auto-intoxications and pregnancy, *preparing* the entire mechanism for physical and chemical action, *while the muscles are utilized in the actual production of heat and motion.* When the afore-named stimuli drive the organism so as to prepare the internal organs for action their secretions are discharged into the blood stream. If the muscular response, for which this internal glandular secretion is preparatory, does not follow, the reaction of the organism is incomplete, and the glandular secretions are predicted as harmful to the organism, being productive of numerous diseases.

Vaughan has shown that the presence in the body of any alien protein causes an increased production of heat, and that there is no difference between the production of fever by foreign proteins and by infections. Before the day of the hypodermic needle and experimental medicine, the foreign proteins found in the body outside of the alimentary tract were brought in by invading micro-organism. Such organisms interfered with and destroyed the host. The body, therefore, was forced to evolve a means of protection against these hostile organisms. The increased metabolism and fever in infection might operate as a protection in two ways—the increased fever, by interfering with bacterial growth, and the increased metabolism, by breaking up the bacteria. Bacteriologists have taught us that bacteria grow best at the normal temperature of the body, hence fever must interfere with bacterial growth. With each rise of one degree centigrade the chemical activity of the body is increased 10 per cent. (Page 181, Criles' Origin and Nature of the Emotions.)

Identical histologic changes were found

in the brain, thyroid, adrenals and liver, in fever, insomnia, after the injection of the toxins of gonococci, of streptococci, of staphylococci, and of colon, tetanus, dyphtheria and typhoid bacilli, and after the injection of foreign proteins, of indol and skatol, of leucin and of peptones. The brain, thyroid, adrenals and liver were studied in a long list of different animals. One of the chief objects of these studies was to determine if the changes produced in these organs *were the result of work done* by the brain-cells, thyroid, adrenals and liver in running, in fighting, in emotion and in fever, or if these changes were the result of chemical products of metabolism.

It was definitely demonstrated by Dr. Crile and his associates that the changes produced in the above named organs were the result of *work changes,* and not due to chemical products of metabolism. (Page 186, Crile's, Origin and Nature of the Emotions). Here we have still further proof of the mechanistic theory of the human body, and the similarity of the body's reactions to diversified dissimilar factors.

### Experimental Data from A. T. Still Research Institute

All the evidence presented in this paper up to this point has been confirmatory of the fact that the organism is an adaptive mechanism, the concluding evidence presented to sustain this view, will consist of experimental data derived from the A. T. Still Research Institute of Chicago, work performed to date by McConnell and Deason and their associates, published in Bulletins No. 1 and 2.*

The chief object of the work done at the A. T. Still Research Institute was to determine by experimental means whether or not slight structural defects artificially produced under anesthesia, in the spinal structures of animals, were followed by observable changes in the behavior of such animals; further, if nutritional changes followed such lesions, and what, if any, histologic changes were produced in the spinal tissues and the organs supplied by the spinal segment lesioned. The work performed to date is incomplete, but convincing of the truth of the mechanistic theory as far as it has been completed.

It has been definitely determined that lesions artificially produced may cause bony articulations to be held in strained relations; that the spinal ligaments are histologically altered in structure; that the circulation to the injured and adjacent segments may be impaired by the lesion, and that the nerve cells in the spinal segment where the lesion was produced show *work changes* in the form of chromatolysis. It has been determined further that the viscera in nerve relationship with the injured spinal segment show histologic changes in its parenchyma, in altered circulation, in impaired function, and to some extent peripheral nerve degeneration.

It has been experimentally demonstrated by Cannon and his associates that the organism reacts to the stimuli of pain and the emotions of fear, rage, etc., by altered internal secretions. Powlow has demonstrated that the organism reacts to psychic stimuli in altered digestive activities. Vaughan and his students have shown that the organism reacts to infections by the elaboration of specific body-cell ferments. Crile and his associates have made known that the organism reacts to exertions, injuries, emotions, infections, auto-intoxications and pregnancy, with identical histologic changes in the brain, thyroid, adrenals and liver, and these changes are all preparatory for the production of heat in fevers or the production of motion in the musculo-skeletal framework, for flight or fight. McConnell and Deason and their associates have brought out that structural derangement of the musculo-skeletal framework of the body changes the behavior of the organism.

All of this experimental data is confirmatory of the fundamental principle that the organism is an adaptive mechanism, a transformer of motion, which is the thought that has been from the beginning fundamental to the school of practice introduced into the world's therapeutics by Dr. Still and called by him osteopathy. He was convinced that an intact musculo-skeletal framework was of primary importance to the organism in its struggles of adaptation, and that a deranged musculo-skeletal framework would restrict the organism's adaptive capacity, bringing on more frequent adaptive failures, therefore productive of emotional distress, and a

*Bulletins, 1 and 2, A. T. Still Research Institute.

cause for mental depression and discouragement. He regarded such derangement as a cause for lowering body-cell resistance by overwork and interference with normal body-cell activities, also a predisposing cause for infections, because of lowered body-cell vitality in structurally deranged areas, and through these and other factors in his opinion productive of acute and chronic diseases as well as death.

Following are a few additional reasons for this belief: From Crile's experimental laboratory comes confirmatory evidence that the organism reacts to external and internal environmental stimuli by altered internal secretions, which prepares the organism for a musculo-skeletal response in either fight or flight, but that musculo-skeletal response is often suppressed leaving the chemical secretions from the adrenals, thyroid and liver in the blood as harmful products, productive of numerous diseases. Experimental as well as clinical data are cited as proof of the correctness of these conclusions.

## Mental Control as Valuable Therapeutic Agent

The only therapeutic agent of permanent value under these conditions when the musculo-skeletal response is suppressed would consist in proper mental control of the patient, so as to avoid as much as possible repetitions productive of this harmful effect, and thorough elimination by the emunctories. The only permanent cure for these incomplete emotional reactions, would consist in training the individual to a realization of the harmful effects of these emotional states, and rational assistance to the eliminative organs in the removal from the body of the harmful chemical products. If pathological change has taken place in the internal secretory glands that precludes the possibility of restoration of functional integrity, surgical intervention must be advised. But these are incomplete reactions that we have been dwelling on, and constitute partial failure on the part of the organism to respond by adequate adaptation to adequate stimuli.

The mere liberation of the internal secretions in anticipation of muscular action, without the anticipated musculo-skeletal motion following, already constitutes a failure of adaptation, for it consists of an incomplete response to an activating stimuli, and must be productive of strain, if the organism is a part of the scheme of nature, controlled by the rules of nature, necessitating that an adequate reaction follow as the result of an adequate stimuli falling on the organism. As the human organism is a neuro-muscular mechanism, which can make a complete response only by means of muscular motion to nerve stimulation it follows that if muscular action which ought to follow is suppressed the reaction of the organism is incomplete and constitutes a partial failure of adaptation.

In an adequate muscular response of the organism to an activating stimuli respiration is modified, circulation is modified, digestion is modified, perspiration is modified, thirst is modified, elimination is modified, etc., and there is modification of the secretions of the internal glands. The entire process must be initiated by the stimulation of the primary peripheral sensory nervous system, either through the chemical contact, or special sense divisions of the primary peripheral sensory nervous system, and the motor response must be transmitted from the brain to the spinal cord centers, ending in the anterior and lateral horn cells, and by the peripheral fibers of the anterior horn cells to the musculo-skeletal framework of the body to produce motion. The white rami must transmit the response from the lateral horn cells to the sympathetic ganglia, whence it is passed on by sympathetic fibers to organs and vessels to alter motor, secretory and vaso-motor changes throughout the entire body.

The reasons why such strong emphasis is placed on the spinal structures by the osteopathic profession are:

First. Because the spine is the most complex mechanically of all the skeletal framework.

Second. Because slight structural defects in the mechanics of the spine may have a profound effect on distant vital organs.

Third. Because spinal lesions cause peripheral nerve interference, resulting in vicious circuits, overstimulation, as well as being inhibitory to nerve currents constantly passing in and out from the periphery to the central nervous system and vice versa.

Fourth. Because the spinal cord is the highway over which the in- and outgoing nerve impulses are transmitted, by means of which the functional activities of the various systems of the body are regulated, coordinated and controlled.

Fifth. Because the sympathetic ganglia are in close anatomic relation to the spinal structures, and subject to disturbance when the spinal column is strained, warped or twisted, etc.

We have seen how mechanical the act of respiration is, dependent upon the perfect mechanical action of the ribs as lever arms to supply the body-cells with oxygen and the removal of carbondioxide; how mechanical the act of circulation is, with its central pump and tubal ramification, supplying all the body-cells with oxygen, food and drink and the conveyance of waste to the eliminative organs; how mechanical the nervous system is constructed, with its sixty-two spinal trunk lines and its twenty-four cerebral trunk lines, criss-crossing in every conceivable manner through the musculo-skeletal as well as visceral structures of the body; how mechanical the act of muscular contraction is, acting as pullies, pries and levers in putting the bony skeleton into motion; how mechanical the hingelike ligaments act in allowing free flexion, extension, lateral bending and rotation of the skeletal framework, and how in order to insure the most perfect reaction on the part of the organism as a *unit* every part must perform the services for which it exists in the body in a perfect manner to insure the best results.

There must be perfect freedom and unimpeded flow of blood to every body-cell in order to provide good nutrition and normal capacity of reaction. The nervous system from the greatest trunk line to the smallest nerve fibril must be free from irritation and inhibition to insure perfect regulation, coordination and control of all body-cells by means of the central nervous system. There must be perfect elimination of all waste matter by the skin, lungs, kidneys and bowels. All of which necessitates that the bodily mechanism as a *unit* in perfect structural relationship and nutritional integrity throughout every system, organ, tissue and cell of the entire body to assure the best possible adaptive reactions.

Would not the working efficiency of the mechanism as a *unit* be reduced by any of the following conditions?

Some structural defect in the framework of this complex physical mechanism by means of thermal variation, chemical changes, electrical forces, mechanical strain, mental problems, etc., resulting in exertions, injuries, infections, emotions, auto-intoxications, etc., productive of strain in the fascial attachments transmitting the controlling nerve fibers and circulation to the vital organs of this complex mechanism.

Muscle tension productive of waste of muscle pabulum.

Histologic alteration of the ligamentous joint structures productive of resistance to skeletal motion by muscle contractions.

Circulatory interference through ligamentous thickening, muscular rigidity, or articular malposition.

Intrinsic nerve irritation productive of viscious circuits in the form of reflexes.

Inhibition of normal nerve impulses between the periphery and the central nervous system.

And would not such conditions further be responsible for defective reactions? Would not this condition result in more frequent adaptive failures and therefore productive of emotional distress, mental depression and discouragement, also a lowering of body-cell resistance produced by overwork and interference with circulation and nerve control, productive of a cause predisposing to infections resulting from lowered vitality of body-cells in deranged areas? I sav, would not one and all of these conditions lower the efficiency of the mechanism and therefore be provocative of both acute and chronic diseases as well as death in extreme structural defects? Further, would not the correction of the above enumerated conditions constitute a rational procedure for the cure of defective reactions or behavior of the organism, and would it not still further be a rational thing to do, productive of good to the organism, to society, to the State and to the Nation?

Why, then, oppose the development of this rational system of therapy by restrictive laws, both State and National, and why restrict our development by foolish, shortsighted policies, limiting our growth and development to one phase of this great principle of life, for to assist the organism in its efforts of adaptation constitutes the practice of osteopathy. Therefore all means that preserve, support, assist and sustain the organism in its struggles with the environment becomes a necessary part of the work of our profession.

# Cause and Treatment of Malaria

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(*Paper prepared for the K. C. session of the A. O. A., August,* 1916.)

MALARIA is a disease which is becoming less general every year. In most northern States it is rare. In many regions of the South it is quite common, although rapidly being eliminated. By destroying the breeding places of the mosquito through drainage of swamps, coating water pools with oil and protecting human beings from mosquito bites the disease as an epidemic can be controlled. The two most notable examples of the extermination of malaria are furnished by Havana and the Canal Zone, where at the present time it is almost unknown.

Simple, uncomplicated malaria is not often fatal. It shows three clinical forms, tertian, quartan and aestivo-autumnal types. These are caused respectively by three species of parasites, plasmodium vivax, plasmodium malariae and plasmodium falciparum. The life histories of these species all consist of two cycles, the sexual cycle in the intestine of the mosquito and the asexual cycle in the blood of man.

The asexual organism is injected into the blood through the bill of the mosquito. It enters the red blood cell, lives off of the red blood cell and increases in size. When the organism reaches its maximum growth and has developed its spores in considerable numbers, the red cell bursts and the spores and toxin from the broken down haemoglobin are liberated into the blood stream. This process takes a definite uniform time to be completed. The liberation of great quantities of toxin and great numbers of spores at the same time overwhelms the body resistance and produces the characteristic paroxysm.

The asexual cycle of the tertian form occupies forty-eight hours, the quartan seventy-two and the aestivo-autumnal twenty-four to forty-eight hours. The latter is indefinite and therefore causes irregular manifestations of malaria. There may be a double infection and therefore more frequent paroxysms.

The leucocytes attack the liberated spores and ingest great numbers of them, but are not able to take care of all that are thrown into the blood stream. Those spores not ingested by the leucocytes attack other red cells and repeat the process of growth and sporulation and in time another paroxysm is produced.

The sexual cycle takes place in the intestine of the mosquito. Some of the spores in the blood stream have sexual properties and are called gamentes. These gamentes are sucked up by the mosquito, and in its stomach the female is fertilized and becomes encased in the intestinal wall. The minute sporazoites resulting from this fertilization migrate to the salivary glands and are injected into the blood of the next person bitten, and again pass through the asexual cycle, with the resulting chills, fever and sweating.

A mosquito is dangerous from eight days after it has bitten a malarial subject until it is dead. The period of incubation varies from thirty-six hours to fifteen days. The paroxysm has three stages, cold, hot and sweating. Before the chill comes on the patient has premonitions, as headache, nervousness, etc. The thermometer indicates a rise in temperature sometimes as high as 105° F., while the surface of the body is cold, and the patient experiences a chill.

This stage may last from ten minutes to an hour. Gradually the coldness of the skin disappears and it becomes hot and flushed. The heart action increases and becomes strong and full. This stage may last from one-half to four hours, when the sweating begins, and with it relief of symptoms and weakness. Variations from the regular course is common.

Quinine is the stock medicinal remedy for malaria, and is claimed by all medical and some osteopathic physicians to be a specific. Yet in practice we often find patients, victims of malaria, taking from twenty to sixty

grains of quinine every twenty-four hours, having no effect whatever upon the malarial paroxysm. My experience with malaria after sixteen years of practice has been entirely satisfactory by using osteopathic treatment alone, and it is with those chronic cases that have used great quantities of quinine for weeks and months that have proven that osteopathy is nearer a specific for malarial infection than drugs. Many cases have passed through my hands and as yet only one patient had a return paroxysm after the first treatment. To me the fact has been established beyond a doubt that the osteopathic physician who fails to cure his patient fails because of his ignorance of the application of osteopathy, and not because of the failure of osteopathy.

We have seen that the spores of the plasmodium malariae in the blood stream are consumed by phagocytic action. If this phagocytic action is increased to the point where more organisms were killed than those attacking red cells we can say we have the disease under control.

According to our best authorities phagocytic action depends on the presence of opsonins in the blood stream which prepare the organisms for ingestion by the leucocytes. To increase the opsonic index is to increase the number of bacteria ingested by the leucocytes.

Again, according to leading authorities, the spleen is a blood forming gland. It is consistently involved in malaria. The spleen is richly supplied with nerves from the splanchnic area of the spinal cord. By our treatment of these nerves we change the nerve action to the spleen, which by its blood forming power increases the opsonic index of the blood, thereby increasing the resistance, stimulating phagocytic action, lessening the number of bacteria and giving nature its chance of exterminating the infection.

It is true that at present we cannot prove the spleen has anything to do with the opsonic index, yet we do know the spleen is much involved in malaria, that it is a blood forming organ, so it looks reasonable that in changing its nerve action we assist the blood cells to control the infection, most probably by increasing the opsonic index.

To prove this conclusively a great deal of research work must be done. We know osteopathy is sufficient in this as in a great many other like diseases, but we must in the future prove it, and the way to do it is to build up our Research Institute with our professional, moral and financial support.

Treatment.—Lay patient on right side; I place my knee against articulation of fifth and sixth ribs with the vertebrae allowing the tibial bone or anterior surface of my leg to rest firmly against the left side of the spine from fourth and fifth dorsal, down over region of spleen. Reach over with hands, grasping upper thorax with right hand and arm, and the pelvis with left hand and arm. A quick, strong, firm traction with arms, counter pressure with knee and leg, will open every articulation along that portion of spine, creating a change of nerve action in the splanchnics, which is the principal point to affect. Directly here we reach the solar plexus, whose effect and control of the abdominal viscera you are all familiar with. This treatment will stop chills, fever and sweating. I follow this up with mild springing of entire spine and local liver manipulation, paying particular attention also to cervical sympathetics.

Case No. 1—Woman, married, age 30, housewife. History good. First attack, had been having the regular malarial type of chill, fever and sweating every other day for six weeks. No return chill after first treatment. No return of the disease to the present time. Time elapsed 16 years.

Case No. 2—Woman, married, age 32. Had malaria for three years. Had traveled extensively to find climate where health could be regained. Had had all medicinal treatment known. Treated first in February, 1907. No attack after first treatment. No return of trouble to date.

Case No. 3—Male, farmer, aged 52. This patient stated he had had malaria for seven years. Never having missed a week without having one to two attacks of chill, fever and sweating. At time of coming to me was taking 60 grains of quinine daily. First treatment, which was given in 1907, stopped the chill, and there has been no return.

Case No. 4—Male, fruit grower residing in Florida. Been treated for malaria for seven months previous to coming to me. Was taking 34 grains quinine daily. Chill, fever and sweating of regulation type every third day. No return of paroxysm after first treatment. One year after patient had had no return of symptoms.

Case No. 5—Woman, housewife, age 48. Previous history good. Had chill, fever and sweating, three attacks, one each occurring on Monday, Wednesday and Friday of same week. Treated case Saturday following. Another attack on Sunday. Case treated on following day. No return of attack afterward.

# TREATMENT OF MALARIA

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*(Paper prepared for the Kansas City sessions of the A. O. A., August,* 1916.

IT has been said, "The life history of the malarial parasite is one of the most interesting chapters of medicine. Lavaran discovered the parasite in 1880. In 1885 Golgi noted that sporulation occurred simultaneously at the time of malarial paroxysms. Koch, Golgi and Celli demonstrated the existence of different species for different types of fever. King and Lavaran in 1884 considered the possibility of the mosquito transmission. Grassi and Bignama in 1898 proved the cycle for anopholinae for human malaria. In 1900 (Samborn and Low) infected mosquitoes from Italy were sent to London, where by biting they infected two persons.

While the life history of malaria is very interesting, can you say as much for the treatment by quinine, the drug that produces deafness and paralysis, and the one that incites man to murder? There have been all kinds of theories advanced about how quinine cured. One old theory is that it produces a certain chemical light in the blood that is fatal to the germs. Another assertion is that the quinine floats around in the blood as a bluish light, and if you get enough of the quinine to make enough bluish globules in the blood these globules will kill every one of the germs and you are cured immediately, but if you do not take enough quinine you will have a relapse. Quinine, according to the U. S. Dispensatory, causes a severe congestion of the brain and spinal membranes. Congestion of the brain lowers the body temperature. How about concussion of the brain, and what kind of temperature do we find in such a condition, fever, normal or subnormal temperature?

I have seen men deaf from taking quinine for malaria. One man told me that for seventeen years he had heard only the loudest noises, and that many times he had watched the little bird's throats swell with their songs and, try with all his might, not a sound could he hear. I could go on recounting my personal experiences with those who have had too much quinine. Some were paralyzed. One woman was sentenced to the rolling chair for life from an overdose of quinine.

Malaria is a great anemic disease, a disease attacking the red blood cells and destroying them by millions, and if the body cannot find ready at hand the chemicals, or the substances, to manufacture the red blood cells from, a few cycles of the germs will soon make the host very anemic. According to the best authorities there are few conditions that produce as great an anemia, or reduce the red cells quite as rapidly as acute malaria. An acute attack may reduce the red cells to as low as 500,000 cells, so Kelch says. Frequently a reduction of 1,000,000 is observed during the first day, with a progressive reduction as time goes on. In the afebrile period the reduction, of course, is a great deal less. In cases of chronic malaria the red cells are commonly reduced to as low as 583,000 (Kelch). The leukocytes do not show very much change in acute malarial attacks of average severity, although a slight leukocytosis amounting to about 10,000 has been observed by Billings and others. In chronic malaria the leukocytosis is marked.

In giving a description of my treatment I would call attention to the fact that it is very simple, and based on the theory that leukocytes destroy all kinds of germs (Bass & Johns Journal of Esperin. Med. Vol. 16, 1912). The malarial parasites are cultivated only in the red cells of human blood and are destroyed by the leukocytes. We know that the leukocytes destroy the germs of malaria, or at least we accept that as a fact. Beef varies in richness of blood and juice. Some beef, especially veal, is unfitted for the treatment, as the rich red juice is what does the work and in veal the juice is not rich enough. The variation is so great that it is not safe to say you get two ounces from a pound, or four ounces from a pound, as it takes fine beef to produce three ounces of extract to the pound. If I am treating a case of quartan or tertian malaria I feed the patient all the way from one and one-half to three pounds of steak per day, if they are able to eat it. If they are unable to eat the beef steak I give them the juice of from three to five pounds of rare steak per day,

depending on the richness of the steak and the severity of the malarial infection.

I have given all the way from five ounces of rich red juice to about thirteen ounces of juice per day, for three or four days, and in very severe cases of estivo-autumnal malaria as much as four ounces of extract every six hours for as long as twenty-four hours. It may be given in large quantities, but if administered one ounce every hour, or one ounce every two hours, the stomach will refuse to take it when the blood gets supplied with sufficient corpuscles. I would recommend to stop crowding the beef or the juice as soon as the stomach refuses. The sick stomach that accompanies a malarial paroxysm is relieved almost immediately by the beef juice, so it may be given if it can be swallowed. It very seldom fails to stay, and almost always relieves the sick stomach unless there is a regurgitation of bile, which seldom happens in quartan or tertian malaria, and generally happens in estivo-autumnal malaria. In black-water fever with hemorrhage an ice cap should be put on the abdomen and kept there until the hemorrhage stops. As soon as the stomach will take the beef juice it should be given liberally. If it were possible to get a case of black water fever the first hour and give it fully four ounces of beef juice you will find that the patient will have a very little if any sick stomach.

The lesions in malaria are, as far as I have been able to find, enlarged spleen, nature's effort to increase the number of blood cells and enlargement of the liver, another one of nature's efforts to throw off the poison products caused by destruction of blood cells and other poisons brought about by the malarial process. The liver should be treated thoroughly at least two times a day for three or four days. Giving strong treatment to the splanchnic region, relaxing the dorsal and lumbar muscles, I find to be the procedure necessary in conjunction with the administration of the beef to cure very quickly any malarial condition. Every effort should be made to keep off the second paroxysm. If these instructions are followed the attack will end in 90 per cent. of all cases with only the initial chill, and never more than two chills.

321-322 Elks' Temple.

## TREATING TYPHOID FEVER

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Roswell, N. M.

(*Paper read before the Annual A. O. A. Convention, Kansas City, Mo., July 31-August 5*).

IT IS useless in this assembly to go into detail as to the diagnosis of typhoid fever or its clinical history. I will confine myself in this paper to a discussion of its treatment. In order to fully understand the osteopathic treatment it is essential to review some of the underlying causes of fevers in general and typhoid fever in particular.

I think all physiologists will agree that all fever originates in an irritated or disturbed vaso-motor nerve center. (Even this is not the primary cause, but this gives us a common ground from which we may draw our deductions). The arteries are composed of three coats, one of which is muscular. It is the function of the muscular coat to contract and expand, to assist in the passage of the blood through the arteries. A contraction of this coat lessens the lumen of the blood vessel.

The first effect of irritation to all motor nerves is to cause contraction of muscle. If for some reason we have an irritated vaso-motor nerve center let us see what the result would be. One result at least would be a contraction of the muscular coat of all the arteries. This lessens the lumen of the blood vessel and restricts the space through which the blood must flow. The heart having just so much blood to force through all the arteries in a given length of time, and now having no assistance from the muscular coat of the blood vessel speeds up its own machinery to meet the deficiency. The heart beats faster and stronger to accomplish its work. The same amount of blood is forced through this restricted space, and this makes friction and consequent heat. This accounts for your rapid and bounding pulse in the beginning of the fever. Of course increased metabolism on account of the increased energy of the heart accounts for some of the heat also.

There are many causes for irritated vaso-motor nerves. For instance, one may sit exposed to a draft when perspiring. The

warm skin is sensitive, and the endings of the nerves supplying the muscles just underneath are irritated by the contact with the cold draft. They send greater or faster impulses to the muscles which they supply. These muscles contract. Now, in and underneath the muscles between the shoulders lie the nerves which make up in large part the vaso-motor nerve center. The contraction of these muscles in contact cause mechanical irritation to these nerves, and so is set up mechanically the cycle of action which we know as fever.

Those vaso-motor nerves are peculiarly susceptible to chemical irritations. There are many different kinds of toxins manufactured within the body under favorable conditions which act as a direct irritant to the vaso-motor nerves, and so chemically is begun the cycle of action which we call fever. Different toxins produce different cycles of action, and so we have our differently named fevers.

In typhoid fever the toxin is caused by the ravages, death and excreta of the typhoid bacillus, a germ which has found lodgment in the body largely in the bowels, and which multiplies rapidly and dies quickly, and whose poisons destroy the power of reproduction approximately in twenty-one days. This toxin is peculiar in that it has its virulence in cycles, and because of that is fairly easy to distinguish. Now then the osteopathic physician has been called in and has made a careful examination and diagnosis. How will he handle this case and justify himself scientifically? For an osteopath cannot be empirical. He cannot say, "Try this, and if it does not work we will try something else." He must answer to physiological facts for all he attempts to do.

In typhoid, as in all other fevers, the first thing the osteopath will attempt is to reduce the irritation to the vaso-motor nerves. The primary irritation here is chemical and cannot be reached at once, but the osteopath has much he can do. The irritation to the vaso-motor nerve center has produced secondarily a muscular contracture over its own area, which is an added irritant to the chemical one.

The osteopath by gentle manipulations reduces this muscular contracture and takes from the vaso-motor nerves all the mechanical irritation to which they have been subject, and by steady pressure inhibits the activity of the nerve in response to the chemical irritation. They respond quickly and soon reduce to a normal activity. The muscular coat of the blood vessel wall relaxes, the lumen of the vessel enlarges, the heart beats slower and easier because it does not need to work so hard. The little arteries and capillaries next the surface of the body, which have been practically closed, fill up with blood. To outward appearance the fever is higher than before, for more of the blood is at the surface and it has not had time to cool.

At this juncture I give a sponge bath of tepid water, and often follow this with an alcohol bath, which cools the blood at the surface and in consequence reduces the fever. I have often reduced the fever from 2 to 4 degrees by this procedure. This can be done three or four times a day and the fever kept down.

### Phagocyte the One Known Enemy of Typhoid Bacillus

If this were all the osteopathic physician could do it would be much, and would lessen the terrors of the disease itself and of the sequelae as well. But the osteopath has only begun to use his possibilities at this stage of the case. There is only one known enemy to the typhoid bacillus capable of destroying him, which does not at the same time destroy tissue and become more dangerous to human life than the presence of the bacillus itself. This known enemy is the phagocyte, the white blood corpuscle, nature's remedy. This defendant of the system is kept in squadrons in the blood stream ready to go out to do battle at any time. But in the condition I have described with this thickened blood vessel wall he finds it very difficult to get through in order to give battle.

Can the osteopathic physician help in this conflict? As I have shown at this stage of the procedure the blood vessel is practically normal. It will not be so for long. These vaso-motor nerves will soon begin to respond again to the chemical stimuli. So what is done must needs be done quickly. These bacilli are practically all in the bowels. The blood vessels of the bowels are capable of holding all the blood in the body.

Just above the place the abdominal aorta divides into the iliacs are given off practically all the blood vessels which supply the bowels. Now then the physician places his

fingers over the iliacs just below their origin and presses upon them hard enough to interfere with the passage of the blood through them. The blood seeking the course of least resistance passes out into the bowel vessels, and thus floods the bowel with blood.

I generally hold these about three minutes when the bowels are flooded. The white blood corpuscle rushes out by the million to the fray, and the battle is on. If enough recruits can be furnished the outcome of the battle is sure. So I repeat the process three or four times a day and in a large percentage of cases the fever is aborted and in all cases lessened.

I have gone only into the osteopathic treatment, and not all of that. I take it every osteopath will recognize that there must have been an initial lesion or the bacilli would never have found lodgment and a culture medium. He will have found, and if possible corrected, this lesion in the first place. He will have been careful of the diet. As for myself I do not care to have my typhoid patient have any nourishment while the fever is on. I give him all the cold water he wants. Keep the bowels well washed out, and if convenient keep them regulated with sweet cider.

I have said nothing here of the sanitary conditions to be enforced in order to protect the family and the public, and perhaps many other questions will arise in your minds that ought to be discussed. This paper, if it promotes discussion and thought, will have served its purpose.

### Case Reports

No. 1. Alfred P. Aet. 21. During an epidemic of typhoid fever in 1901, in Central Iowa, there were more than 200 deaths in a town of 5,000.

Present day methods of diagnosis were not available but the epidemic was so severe and the symptoms so pronounced that mistakes of diagnosis were rare.

I was called to see this case Sept. 3.

He complained of aching in every bone in his body.

Had a temperature of 103; tongue brown, furry with bright red edges skin dry, eyes blurred.

His sister two years younger was in the same condition.

She was under medical treatment and ran a typical course of typhoid. I relaxed the muscles of upper dorsal region thoroughly. Put steady pressure on both sides of the spine at the third and fourth dorsal. When I had reduced the pulse rate 10 points I gave a tepid bath, then put steady and quite hard pressure over the byfurcation of the abdominal aorta. This for the purpose of flooding the bowels with blood. I repeated the process three times the first day.

The first night there was no appreciable rise in temperature. The next morning the temperature was 102. We repeated this treatment each day until the 6th. day when the patient was free from fever. No nourishment was given to the patient during the fever period. He was given all the water he wanted. Bowels are kept open with enemas. After the 6th day a liquid diet was supplied. He went to work the 14th day.

Mr. B. Aet. 38 Editor. Was called Sept. 7 after the patient had been sick a week and under medical treatment. Case had run the typical typhoid symptoms up to this time and the medical attendant so pronounced it, and I acquiesced in the diagnosis. The evening I was first called the temperature was 105. I proceeded to give the routine treatment as outlined above. The temperature gradually subsided until the fifth day after I was called after which there was no more temperature except a trace for a day or two in the evenings. He resumed his work just four weeks from the time he was first taken sick.

No. 3. Mrs. W. Aet. 24. Called to see Sept. 6th had been sick four days under medical treatment and case pronounced typhoid. As the symptoms were classical I acquiesced. in the diagnosis. Temperature 104, pulse 140. I began at once the treatment above outlined, giving three treatments, the first day and night then two treatments a day until the seventh day when the fever was entirely subsided.

This patient was discharged the fourteenth day.

In another epidemic occuring some years later in New Mexico when methods of diagnosis were improved I was called to attend the family of a Mr. W. living in the country ten miles. I found the mother and three daughters prostrated with the typical symptoms of the onset of typhoid fever. Typhoid bacilli were found in the blood, urine and stools. The mother had been sick for three days before I was called.

The house had been unscreened and flies were numerous. I ordered the house screened at once and proceeded to give the routine typhoid treatment.

After the second day none of these patients ran a temperature over 102 degrees. The mother and the youngest daughter, aged 13, ran a temperature ranging from 99 to 101 for the customary 21 days and made complete recovery without any disturbing sequelae. The other girls had no fever after the sixth and seventh days respectively.

In these cases I used the customary starvation diet except that I gave them enough sweet cider to keep the bowels open.

In all these cases I gave enemas as freely as I did the baths.

# ACUTE APPENDICITIS

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(*Paper read before the Kansas City session of the American Osteopathic Association, August,* 1916).

*Etiology*—In acute appendicitis we have an acute catarrhal inflammation caused by some irritant which is more or less constant. This constant irritation necessarily produces an inflammation which penetrates deeper unless the irritating cause is removed. This irritant is present because of weakened bowel action, or because of some accident through which some foreign body becomes lodged there. The former is the more frequent. In fact it has been ascertained that the percentage of cases of appendicitis caused by foreign bodies is very small compared to those caused by concretions and irritations from the bowel within.

It is through this weakened bowel action attributable to some lesion affecting the innervation to the part involved that we get appendix disease. The source of this innervation is usually from the tenth dorsal to the second lumbar vertebra. Again it may be caused by a lesion further down, as at the sacro-iliac articulation, or a rotation of the fifth lumbar on the sacrum. Either of these two lesions may cause an impingement of the nerves supplying the deep layer of muscles, multifidus and erector spinae, and through the contracture of these muscles producing a secondary lesion which may result in malnutrition to the part. Such a lesion can, and often does, affect the entire spine and may involve the action of the stomach, the liver, the pancreatic secretion or even the kidneys, thus affording cause for indigestion, constipation, toxemia and any or all accumulative conditions that result in appendicitis.

*Constipation,* has been one of the prevailing conditions of a large percentage of the cases that came under our observation. Of these, four had suppurated and were well advanced, a large amount of pus being found in the evacuation.

In an impacted bowel we have an effort on the part of the small intestine to empty its contents against an obstruction in the form of dry impaction in the colon, which may produce an inflamed condition of the ileosecal valve, and this inflammation then gravitating toward the lower end of the bowel thus might be an important factor in producing appendix disease.

*Spinal Injury,* resulting from an unlooked for jolt on playgrounds at school, producing a subluxation, and then the child seated at the desk calculated for one much younger than the occupant, to augment the condition, may and often is cause for appendicitis. Auto jolts contribute their share to these conditions. Moral: School plays systematized and school desks should be adjustable to the child that occupies the seat. We should have better roads and saner driving.

*Pathology.* Pathologially, we have around the spinal lesion a *thickened spinal ligament,* malnutrtion to the spinal segment, an abnormal nerve impulse, an inflamed bowel. Inflammation may extend to nearby structures. A thickened bowel wall and peritoneal covering may cause a narrowing of the lumen of the bowel at this point. Constipation generally present. May have concretions in the appendix or some foreign body. May have deep ulceration causing sloughing off of the appendix, resulting in obliterating appendicitis. Patient may recover, thus be rendered immune from further attack. Dr. Osler says, "recovery is the rule." In other cases ulcerative gangrene may follow and general peritonitis may be the outcome and death follow.

*Course.* The course of appendicitis is from three days to as many weeks, depending on the severity of the case, the time in which the physician is called and the kind of treatment administered. Too much stress cannot be placed on *timely* attention to appendix disease.

*Symptoms.* Patient is taken with sudden pain in abdomen, pain may be diffused and patient unable to locate it; it may be on the opposite side or radiate around the umbilicus, but after the first day usually localizes itself in the right iliac fossa. Pain may be very intense and thigh flexed on abdomen. Muscles over the affected part very tense. There is tenderness over the part known as McBurney's point, elicited on pressure. Nausea and vomiting is present. There may be irritability of the bladder and a desire for frequent micturition.

*Differential Diagnosis.* Typhoid fever, biliary colic, renal colic, bowel obstruction and acute salpyngitis may simulate acute appendicitis. But in typhoid fever we have the running temperature and dicrotic pulse. In biliary colic we have pain radiating further up around the biliary duct under the shoulder blade. Jaundice is present. In renal colic pain shoots down the inner side of the thigh and along the ureter. In bowel obstruction you have no fever, no rigidity of abdominal muscles. There is bloody stool, vomiting of fecal matter and tenesmus.

In acute salpyngitis we have a history of a yellow vaginal discharge prior to the pain, and pain is located further down near pubic ligaments.

*Treatment.* Correct the lesion if condition of patient is such that it can be done without too much pain, otherwise gentle but deep inhibitive treatment to aid in relaxing muscle tension is indicated. If patient is not in bed, see that he or she is placed in bed, and remains there until otherwise ordered by the physician. Thorough blood supply and drainage is essential in handling of appendix disease, hence free the part, but do not irritate it.

Once patient is quieted remove all fecal matter by the use of enema. Normal salt solution 108° Fah. is best. Two quarts can generally be used in most adults, smaller patients in proportion. Fountain should not be placed over two feet above patient at first, and a gentle flow used in dilating the bowel and loosening contents. Physician should do this work in person, supporting the patient with his left hand while with the right water should be aided in passing the sigmoid; patient lying supine for the first half of the enema. Now turn patient on right side, and with right hand elevate the ascending colon at hepatic flexure toward the median line. This aids in emitting gas that may collect in and around the lower end of the bowel, and thus get water to the parts involved. Use only a soft rubber catheter, No. 15 is preferable, and one having a side opening. Insert about three inches, then start water going, let catheter follow the water as bowel is dilated; this will enable you to give the high colonic bath and obtain satisfactory results without injuring the patient, as may be the case with too large a tube. More than this the patient seems to hold enema to better advantage.

Do not hurry the work. Rapid work on abdomen is contra-indicated. Patient should hold enema as long as possible and colon on right side well flushed.

If patient suffers much pain after this enema a mustard draft with egg mixed placed over the affected part and left on for about twenty minutes, then followed by a warm poultice placed over the reddened skin with a hot water bottle will hold the body heat, frequently allays pain and patient falls asleep. This stimulus facilitates passive circulation during physician's absence.

Patient should be seen by physician not less than two or three times during the *first twenty-four hours,* and twice a day for the first three days. If pain and enlargement over bowel persists, a surgeon should be called in consultation.

In our sixteen years of practice, covering something over fifty cases, however, we have had no cause for calling a surgeon but once, and then there was no operation. Do not understand me to say never operate; far from it, but I do say let that be the last resort. In the language of the Old Doctor, "adjust the spine, lift up the bowel," and your patient will get well.

After the first week's treatment to elevate the bowel we use the Trendelenberg position. In the sick room this can be done by the use of a chair with back up and a folded quilt and pillow placed on this, then patient supine, head down, you begin well toward thorax on right side and lift up the colon toward hepatic flexure and into median line freeing all parts in bowel. Lesion corrected nature will do the rest.

Enema should be given once per day for the first week or until soreness has disappeared. Do not use too much water at a time. It is not the amount of water you use, but how you apply the water used that obtains best results.

After the first week, twice or three times a week, depending on condition of the case, for about two months a flushing of the bowel, preferably after a natural stooling is helpful.

*Diet.* Rest the bowel as you would in a case where surgical operation on these parts had been performed. When soreness has

disappeared patient can be given to drink distilled water that has been let stand to cool, or boiled water, where distilled water cannot be had. Then after the first day patient progressing nicely, lemon or orange juice may be squeezed into the water, and a small amount given at frequent intervals. Use juice of one-half lemon and one orange to four glasses of water, no sugar.

Physician should keep track of pulse and temperature of patient. Make a record of each day's progress for the first week. There being no change after the first week, liquid diet may be entered upon. Never permit a patient to take solid food in treating a case of this kind osteopathically any sooner than if treated surgically, and your results will surprise you.

523 DIVISION ST.

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## NITROUS OXID-OXYGEN GAS IN OBSTETRICS

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(*Paper read before the Kansas City session of the American Osteopathic Association, August,* 1916.

THE use of nitrous oxid-oxygen analgesia in obstetrical practice is a subject of vast importance to every one interested in the alleviation of human suffering, and opens the door into the era of an efficient and harmless method of painless child birth. This gas, though it may be new to the osteopathic profession, has passed the experimental stage and the time is not far distant when this method will be recognized as the greatest stride made in the field of obstetrics since the employment of asepsis.

If child-bearing were purely a physiological process it would be as free from pain as any normal function of the body. But such is not the case. Eutocia, an easy normal delivery, is found only among the primitive people, who have not been influenced by modern civilization. But as a result of artificial living, labor has become an abnormal or pathological process, and the most excruciating of all pain is experienced by the puerperal woman.

The cry of modern times has been for relief for the woman in travail, and for a time it was hoped that Germany had offered a solution to the problem in "twilight sleep," which is produced by the administration of scopolamine and morphine. But on careful investigation it was found to have been discarded by practically all the leading hospitals in this country as unsafe. On a personal investigation of a number of the leading hospitals in Chicago and cities of the east, only one was found employing "twilight sleep," and that on condition the institution receive a signed statement exonerating the physicians from all liability.

But in osteopathic technique, combined with nitrous oxid-oxygen analgesia, we have the answer to this cry of suffering motherhood. This gas-analgesia does not relieve the woman of labor, and is not intended to. It does relieve the pain, in an efficient and yet harmless manner, and with this assistance osteopathic obstetrics is able to produce a normal painless childbirth.

Nitrous oxid is an odorless gas, discovered by Priestly in 1772, the same man who discovered oxygen two years later. In 1800 it was first used as an anesthetic, but owing to the impurity of the gas secured, and the crudeness of the apparatus employed in its administration, the gas did not come into general use at that time. Dr. Webster, of Chicago, was one of the first men in America to use nitrous oxid and oxygen in obstetrical practice. About ten years ago he began to use this anesthetic in operative obstetrics in cases where the use of ether and chloroform were contra-indicated, and gradually extended its use to all types of cases. Since that time it has been used by the hospitals of our leading cities in hundreds of cases, without a fatality reported from its use.

Contrary to the report on "twilight sleep" every hospital visited and every physician consulted using this gas in obstetrics gave it a most enthusiastic endorsement. Since becoming interested in this subject I have sought by every means to find some one who could offer an objection to its use, but without a dissenting voice among those having used it. Anesthesia in "twilight sleep" produced by scopolamine and morphine is to all intents and purposes a narcotic drunkenness, and therefore directly opposed to the principles of osteopathy.

As ether and chloroform are fat solvents it is supposed that anesthesia is produced

by these drugs by partially dissolving the lipoids of the brain and other important structures. Besides materially affecting the red blood cells it also puts to rest the phagocytes. A patient can not by anesthetized with ether or chloroform until all the fatty substances are thoroughly saturated with the drug. Hence the time required and the injury that results from drug anesthesia.

On the other hand, nitrous oxid-oxygen gas is composed of nitrogen and oxygen, the principal elements found in air, and is as harmless as a breath of pure air. In contrast with drug anesthesia, gas anesthesia is produced by a physical combination of the gas with the liquid elements of the blood stream. The gas enters the cell in a watery solution, being conducted through the cell wall into the cell itself by the medium of the blood serum, and out into the blood stream again by the same medium, producing no chemical change upon the structure of the cell itself. As gas anesthesia results from a purely mechanical mixture of the gas with the liquid elements of the blood, thereby limiting the amount of oxygen which the cell may receive, it becomes purely a mechanical process, and is, therefore, in perfect harmony with the principles of osteopathy.

As for the use of H. M. C. tablets in obstetrics the principle is the same as in scopolamine and morphine, or the German "twilight sleep," and is not only contrary to osteopathic principles, but has been discarded as injurious by the leading medical obstetricians.

Going further, it is known and accepted that in tuberculosis (and we often do not know when we are dealing with a case of latent or arrested tuberculosis of the pulmonary type), in bronchitis or pneumonia, and in nephritis of any degree, chloroform or ether, especially the latter, irritates these lesions, transforming the quiescent tuberculosis or nephritis into an active disease, which within a few months may take the life of the patient. Nitrous oxid is the anesthetic of choice when we have an acute lesion as just referred to, and should be chosen at other times to avoid the excitation of a latent tuberculosis, nephritis or bronchitis into a fatal form.

The pregnant woman is so frequently a subject of albuminuria, which may persist for some weeks or months and may or may not be complicated before or at the time of delivery by convulsions, which symptom complex resembles a case of acidosis on the one hand, complicated by nephritis on the other, that to use chloroform in these cases is as bad practice as to use it in a similar case that is not pregnant. The kidneys already have all that they can do to secrete urine, even loaded with albumin without further hampering their action by using such a drug as chloroform. The body also from the very fact that the blood is less alkaline than normal, should not be further depressed in its alkalizing power by the use of chlodoform anesthesia.

### Eclampsia Is Not Affected by the Gas

In eclampsia, a condition occasionally met with in obstetrical practice, there is an excessive amount of acidosis. As this condition is produced by the action of ether or chloroform on the liver cells, liberating an excessive quantity of fatty acids, ether or chloroform are positively contra-indicated. On the other hand, eclampsia is not affected by the nitrous oxid-oxygen gas, which can be used to the point of deep anesthesia, thereby holding the convulsions in abeyance, allowing a forced delivery, a Caesarean section or whatever treatment is indicated.

There is no sleep or even sleepiness and no loss of memory in nitrous oxid analgesia. The mother knows and understands everything, which is essential in obtaining her co-operation. The dressings are undisturbed, no one is needed to restrain her, nor are quiet rooms needed, or a corps of trained assistants to carry out the simple technic, as is required in "twilight sleep."

When the second stage is begun, or before, if the pains are causing the patient great discomfort, the method is explained to her in somewhat the following manner, emphasizing that her assistance and labor will be essential, and that she shall always watch closely for the first sign of each contraction, as the cue for beginning inhalations. To obtain perfect relief from pain the inhalations must be begun promptly, when the first symptom of the oncoming contraction has been experienced. Also, the inhalations must be taken deeply into

the lungs and quickly expelled until the required number (normally three) have been taken. The last breath of nitrous oxid inhaled should be held as long as possible, while bearing down powerfully, so as to get the full benefit of the gas, thus assisting the uterus in expelling the child. As soon as air is again inhaled the analgesia begins to rapidly fade away, and by the time the contraction is over the analgesia is practically gone. Between every few contractions several deep breaths of pure oxygen are administered, greatly refreshing the patient as she rests.

Particular attention will be required to see that the inhalations shall be started each time of the oncoming pain, or the analgesia will be a little late to relieve the pain completely. Again, care should be taken not to begin inhalations too soon, since the pain may come just as the analgesia is fading. We are also interested in the speed of onset and duration of pains, because we have to regulate our analgesia accordingly. A fast pain requires fast analgesia. By diluting nitrous oxid with air its action is slowed, and the greater the dilution the slower the action. As the labor advances in intensity more inhalations will be required for each contraction, until the head is to be delivered, when about ten inhalations are administered, inducing a state of anesthesia, especially if there is danger of laceration.

With these few explanatory remarks the patient usually becomes a close observer, and is not only interested in the relief the gas affords, but is occupied by the definite directions in assisting in the delivery of the child. Normal babies breathe and cry promptly after analgesia, showing no cyanosis or effects of the gas whatsoever. It is never necessary to produce cyanosis in the mother, and even in Caesarean section, eclampsia, or difficult forceps cases, where nitrous oxid and oxygen is always the indicated anesthetic, the baby, if uninjured, breathes promptly.

There are few elements in the administration of gas-oxygen which are of such fundamental importance that uniform success can not be obtained without their consideration. It is necessary that the gases used be of the purest quality. After investigating the gas from different houses I have found the gas put out by the Oxygen Gas Company of this city to be of superior quality.

The apparatus for its administration should be absolutely accurate and automatic in its control of the gas to the patient in order to secure perfect results. After comparing and testing a number of different machines on the market, I have found the McKesson model F to be an ideal machine for the administration of this gas in securing either analgesia or anesthesia. The McKesson is the only intermittent flow apparatus, the only one which automatically accommodates itself to the patient's variable rates or volumes of breathing without requiring some adjustment by hand, one which shuts itself off automatically between breaths or even when the inhaler is removed from the patient. The machine prevents the flow of gas when the mask is removed from the face between contractions without having to touch the apparatus to prevent the waste of gas, and is always ready for the next set of inhalations as soon as the mask is reapplied. Just here I wish to cite a case from my own experience.

### A Successful Treatment

Woman 40 years of age, who had given birth to two children, the younger of whom is twelve. I was called at twelve o'clock at night, but found the patient in the beginning of the first stage of labor. I placed the gas machine at the bed side, gave her assurance as to the safety of the gas (which, by the way, is an extremely important point in gaining their full co-operation), giving her the necessary instructions as to how and when to use the gas, and assured her that there was no necessity for her suffering. I then retired to another room for rest, instructing the husband to call me when needed.

He called me a few minutes after three, and I found the patient in active labor and taking the gas as instructed. At four o'clock, or just fifty minutes after being called, I delivered an eight pound boy. During this time the contractions were extremely severe, but the patient repeatedly gave assurance that she was suffering no pain whatever. Not only was she relieved from all pain, but the absence of pain allowed her to exert all her strength in bearing down and the absence of irritation to the peroneal muscles caused them to relax more readily, causing the period of delivery to be greatly shortened. There were no lacerations, no shock from the intense suffering, no abnormal conditions of any nature. The mother was left resting quietly without nausea, and without extreme fatigue that follows the usual method of delivery. And let me say here that not only the mother, but the

father and the nurse were left in a most enthusiastic state of mind, and it is not difficult to see the place that osteopathy will henceforth hold in that home.

During the past six months I have employed this gas analgesia in a number of obstetrical cases, with the most gratifying results. Not only have I proven for myself the value of the gas, but the painless deliveries, together with the osteopathic technique employed have brought osteopathy afresh before the minds of the people. I have personally used this gas in various types of cases, such as have severe heart disorders, nephritis, latent tuberculosis, chronic gastritis, etc., and have yet to find a condition in which the gas would be contraindicated.

And now if these statements which we make and affirm be true, can you not see that the women of our land are going to avail themselves of this God-given mercy. And can you fail to see the opportunity that lies at your door in introducing this method of painless childbirth into the homes of your community? As you would have the laity investigate osteopathy, that they might know the merits of your science, just so I ask of you a thorough investigation of nitrous oxid-oxygen gas in combination with osteopathic obstetrics.

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## NERVOUS PATHOLOGY OF THE DRUG HABIT

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Philadelphia.

(*Paper read at the Kansas City Sessions of the American Osteopathic Association, August*, 1916.

THIS subject has been chosen for two reasons: In all of the literature of our profession I do not recall that in the past eighteen years there have appeared more than two or three discussions on this subject. It has appeared unusual to me that a class of diseases which represent such a large proportion of our population should have been left unconsidered by our profession so long. I do not pretend to give you actual statistics on the number of people in the United States who are suffering from some form of inebriety, because, manifestly, it would be impossible to be exact. My attention has been repeatedly called to the frequency of this disease, especially during the last three years, and more especially since the Federal Drug Act became effective. Representatives of the municipal court of Philadelphia have stated to me that in the course of twelve months, approximately, 250 women are picked up on the streets of Philadelphia and are committed by this court to the Philadelphia Hospital as suffering from some form of the drug habit. The unofficial statements of representatives of the Internal Revenue Office are to the effect that there are in the United States, approximately, 100,000 or more people who are afflicted with this habit in some form.

The public is appalled when an epidemic of some acute infection grips one or two thousand of its inhabitants with a few hundred deaths. Instant precautions are taken, of the strictest character, when a case or two of small-pox is discovered in any community. But here is a condition which apparently affects several hundred individuals in every large center of population, and very little is said or done about it. This constitutes my first reason for bringing this subject before you.

My second reason lies in the fact that osteopathic methods in the treatment of this disease offer a measure of relief, which is not now operative. In the operation of the Federal law, it was found that where drug users were committed to the county prison for a period of 90 days, they were entirely free from the drug upon their release. During the term of their imprisonment no treatment was given to them for the habit. The only procedure consisted in rigidly excluding the drug. Therefore, when they were released, although free from the immediate effects of the drug, the desire for its use still remained. This is practically true in all sections of the country where the Federal law was used for a period to stop the practice. A recent decision in regard to the Federal law has rendered even this procedure impossible, and now these cases cannot even be committed when they are found. In the case of the municipal court of Philadelphia, they made a practice of examining all women who were taken up on the streets for soliciting, for disorderly conduct, and

other like charges. If they were found to be afflicted with inebriacy they were committed to the Philadelphia Hospital to be treated for the habit. As stated above the average number of commitments per year for this condition alone, has been in the past about 250. These cases were committed for indefinite periods to be determined by the physician in charge of the hospital. The average length of time which they were detained under treatment was about two weeks. I am reliably informed that the results under this procedure in the past were very unsatisfactory. The only result that was obtained was practically the elimination of drugs, because it takes fully this long to eliminate all of the drug from the body of the patient suffering from this disease. The result was that in a great majority of cases the patient had not been discharged from the hospital for a period of longer than two days until she was again brought before the court and found under the influence of the drug. An apparently interminable chain of arrest, commitment and discharge, without appreciable result has been the rule.

**Best Method of Handling Drug Habit**

It is evident that this method of handling the drug habit has been, and is at the present time most unsatisfactory. It does not cure the patient, and those whose legal authority brings them into contact with these patients have been for some time discouraged. So little good has been accomplished by this method, and such a very small percentage of people suffering from the drug habit have been permanently benefited that government officials as well as the public generally have come to regard it as a condition which is hopeless from the therapeutic viewpoint. Private hospitals and sanitoria have accomplished somewhat better results, but even there the percentage of patients in whom the habit recurs, although for a time abated after treatment, is several times higher than the percentage cured.

Detention in a cell with total abstinence for a short period will not cure. Nor will hospital restraint under the same conditions, unless other treatment is added. I call your attention to these facts to impress upon you the present attitude of the public and of physicians toward these conditions. In the minds of both it is considered for the most part incurable. Because of the suffering which the habit entails upon the patient, and because the habit so often results in crime; because it is a demoralizing habit; because it brings poverty, distress, sorrow, suffering and humiliation to the victim's relatives, the consideration of a possible way of relief from it is of extreme importance.

If alcoholism, morphinism, and cocainism (together with heroinism) could all be blotted out from among our national vices the percentage of crime would be materially reduced, the number of children born weak minded lessened; gambling and the social evil could be more easily controlled; white slavery would be a thing of the past; and the financial burden of supporting numbers of indigent and criminal people more than cut in half. It is my hope that by bringing these facts before you a wider interest will be promoted in the treatment of this condition.

That this statement is true requires only a moment of thought. Because this condition is one that so vitally affects the public welfare, it becomes your duty and my duty to do all in our power to eradicate it. The Federal Government has recognized its menace to the country and has tried, but unsuccessfully, to control it. Medical methods have been tried without avail. It is now our duty and privilege to present whatever relief we may. In the face of the present gloomy aspect of the situation, and nothwithstanding the fact that this condition has up to now been considered incurable, I feel that it is only right to say that osteopathy, with the patient in the proper environment and under proper supervision, will cure a very large percentage of people afflicted by the drug habit.

When I speak of a cure of this condition, I do not mean that the victim of the habit was simply sobered up from its effects, as in alcoholism. I mean that the patient was cured of the desire for the drug, and in some instances has abstained from its use for as long a period as ten years. My statement is based on the clinical record of 127 cases which have

been treated during a period of fourteen years. Some of these cases were mine, and some those of other osteopathic physicians. They include records of patients suffering from alcoholism, morphinism, cocainism, heroinism, and chloralism. The results in these cases have been so satisfactory, and the ratio of benefit so great that it was almost startling when compared with other records.

In this discussion, any morbid impulse which tends to excite individual excess in intoxicants is termed inebriety. Inebriety, therefore, includes alcoholic inebriety, morphine inebriety, etc. Inebriety is again subdivided into two types: First —that type in which the craze is for alcoholic substances and which is called alcoholomania. Second—That type in which the craving is for narcotism by any intoxicating substance and which is called narcomania.

It is my thought that we will better understand why osteopathy will help the majority of these cases, if we thoroughly appreciate the pathological conditions that have led me to take up this phase of the subject for discussion.

**Inebriacy (Narcomania) a Disease**

Until recent years it has been customary to consider drunkenness a crime, and the other drug habitues have been largely placed in the same class. It is only of late that investigations have made clear to us that these people suffer from a diseased condition. And it is only quite recently that we have come to view the inebriate as presenting a distinct pathology with a disease just as well defined as if he were suffering from typhoid fever or appendicitis. I do not mean by this to imply that there is one and only one typical pathology of this condition. But I do assert that there is a definite pathological condition in every case.

Alcoholism is not a crime, but it is a diseased condition which does frequently lead to crime. Morphinism, cocainism, heroinism are not crimes. They are morbid physical states, although they may, and frequently do, lead to criminal acts.

There are two general morbid states to be considered in a study of this subject.

First—The morbid (pathological) state induced by the habit.

Second—The morbid physical state (pathology) which is in reality, in the great majority of instances, an etiological factor.

That inebriety profoundly affects the central nervous system is beyond question. Alcoholic poisoning comprises vascular relaxation, cerebral automatism with incomplete paralysis and muscular inco-ordination, and lastly, the advanced paralysis, unconscious, and automatic existence of dead drunkenness. All of these symptoms comprise an embodiment of three stages of progressive paralysis. Autopsy frequently shows congestion of the brain and its membranes.

By its effect on the nervous system cocainism produces tetanus of the respiratory muscles, acceleration of the pulse and contraction of the peripheral blood vessels. After repeated indulgence there is mental disturbance and decay and moral perversion.

Morphinomania produces an exaggerated sensibility to pain, a suppression of the vital reflexes, functional disorders, mental indolence, cardiac palpitation fitful sleep, morbid, melancholy, and despair.

These all create a condition of the nervous system which excites a crave or craze for further dosage. In the great majority of the cases this type of the pathology disappears if the habit can be discontinued. It is with the second pathological state however, that I wish to deal more particularly at this time. It was the treatment of this pathological state which resulted in the cure of the large proportion of the cases that were mentioned before.

In every case of inebriety which has come to my attention there has been found a physically abnormal state which operated to impel the victim to indulge in the poison. In some of the cases it was a diseased condition, as neuralgia, gastric ulcer, insomnia, nervous prostration. Business worry seemed to account for several cases. In other cases a nervous diathesis was found, and in others spinal lesions only were found. Inordinate or morbid impulse to inebriacy may be induced by extreme weakness, depression, morbid excitement, functional disorder, pathological unrest.

In every case that has been examined spinal lesions, either sufficient to produce the disease that acted as the exciting cause, or extensive enough in their effect to produce pathological unrest were found. There was no constant location for the lesion. Again, in every case in which complete correction of the spinal lesion was accomplished, complete clinical cure resulted. In some of the cases only a percentage of the spinal lesions could be corrected, and these cases exhibited complete abatement of the habit for a time, but ultimately reverted to it.

I am not taking into account the combined effects of quiet, rest, diet, hydrotherapy, or exclusion of the drug which was the basis of the habit. These adjunctive methods were all employed in these cases just as they are employed in hospitals and sanatoria generally. The method additionally employed was the correction of whatever lesions were found in order to eliminate any physical morbid state that existed as an excitement to indulgence. It is here that the true pathology of this condition lies and it is in the treatment of this pathological condition that the most effective results are obtained.

It is said by writers on this subject, and it is true, that no inebriate can be cured until there is first developed in his or her mind the desire to be cured. Osteopathically we inoculate this desire in two ways. First, we confine the patient and rigidly exclude the drug until all of it has been eliminated from the body. No desire for cure can be born while the patient is under the influence of the drug, for these drugs have the effect of increasing the desire for their further use.

Second, the nervous excitement is relieved by osteopathic manipulation and there the basic desire for some drug excitement is removed by correction of the bodily morbid state or structurally abnormal condition, which has lowered its vitality and produced nervous irritability. Our records along this line conclusively show that by this method a very large percentage of these cases may be helped.

The general records of cases treated by any other method conclusively show us also that this method is at the present time, the only one which offers any relief. For the good of the general public, for the uplifting of human morality, for the lessening of human suffering, for the development of future generations let us hope that our National government and our State governments will find some way to utilize the only method which offers any relief to these people.

PHILADELPHIA BUILDING.

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## INCREASED EFFICIENCY IN DIAGNOSIS

S. V. ROBUCK, D. O.
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NUMEROUS excuses are given for not doing laboratory work in conjunction with practice.

The question is frequently asked, "Can a doctor charge for blood analysis when doing the work himself or herself?" What difference does it make to the patient who does the work, if it be well done? It seems to be a matter of approach; the dignity with which the physician carries himself, as well as training the patients. The expectation of receiving good treatment is the thing that attracts the patient to the doctor. He is usually willing to pay a reasonable fee. But how can the physician give proper treatment without a clear understanding of the perverted physiological function present? The diagnosis is the first great step in the treatment. After diagnosis is made the modus operandi is clearly apparent and results more certain. The time spent in diagnosing is more valuable to the patient than the same amount of time in treatment, for without diagnosis the treatment is empirical.

It is apparent that the laity are becoming aware of the necessity of careful diagnosis and it is essential that the doctor be equipped to give the kind of services needed. Our schools are now training students to do this work. Practical experience must be supported with study and an increase of knowledge in breadth as well as depth.

Physicians having a heavy practice

have not the time necessary to do laboratory analysis and insist that this be relegated to the laboratory specialist. There are many who take this viewpoint, but there are many busy doctors who find time for this work. Some of those holding this view could do the work if they had a practical working knowledge of the subject; but when only a smattering knowledge has been obtained doctors are mislead into thinking the technique much more tedious than it really is. Hence, a technical training is the solution of the problem.

There are, perhaps, a few doctors who find their practice so large that they cannot make the analyses. If this be the case, the best method is to have a specialist do the work. In large cities there are many laboratories which are very convenient and good, but those in smaller places will find it to their advantage to associate themselves with some one who can do the work for them. There is a very big objection to depending on an outside laboratory. When laboratories outside one's office are depended upon, analyses are frequently neglected.

The physician's office of the future, in which there are two or more practitioners, will be equipped with laboratory parphernalia with some one capable of doing laboratory work. This applies to small towns as well as cities. As soon as the small town physician realizes the opportunity at hand he will broaden his usefulness in the community and of course increase his income. I would suggest that physicians have a laboratory in common even though it were not practical for them to office together. Their practice will become more interesting, better results will be obtained, standing in the community increased, and income also increased.

The technique is not impossible for the average, but on the contrary, if the average persons will apply themselves under proper tutoring, the knowledge can soon be utilized. No one exhausts any branch of medicine and if you refuse to utilize its various parts because all the knowledge is not at hand, you will resign from practice before the close of another day. There are many physicians of all schools who do not make blood analysis, but it is not the purpose here to use others as a standard but to set a standard more worthy than has been attained by any profession to date—to add other good features to our good science.

Under the heading of hemotological analysis "intercellular fluid" as well as the cellular elements are considered. Under the former, the most practical tests for the general practitioner would be the agglutination test for typhoid fever and the Wasserman test. The latter is not so practical for one in general practice, even though syphilis in its various stages is frequently encountered. It requires considerable skill but can be mastered if sufficient practice is at hand to keep in training for this technique.

### Typhoid Serum Test Easy of Application

The serum test for typhoid is so practical and easy of application that no one has even a remote excuse for not applying it except that eyesight be very poor or that shaking palsy handicaps the doctor. Parke, Davis & Co. put up tubes, pipettes, and suspended bacteria with complete directions which can be followed by any one who has graduated from our colleges and can be used accurately from the first. Contrary to the idea prevalent, a microscope is not needed or even used with this test. Do not misunderstand. There are methods in which a microscope is essential, but the one above mentioned is not one of those methods. The cellular study consists of hemoglobin test, quantitative count of leukocytes and erythrocytes, differential count of leukocytes, coagulation time, and the parasitology of the blood.

The indications for study of the blood are: when diagnosis is obscure; pus infection suspected; likelihood of anemia or leukemia; enlarged lypmh glands; suspected tuberculosis, typhoid, or malaria; rheumatic conditions; or to determine the presence of vegetable or animal micro-organisms. Some information can be gained regarding tumorous growths. There are other indications, but these are the principal ones. The first indication given is most important and a routine ex-

amination will disclose the nature of the trouble in many instances.

Hemotological study had better be made too frequent than not frequent enough, as is the practice at the present time. In conditions in which there is pain (pain is usually the cause of patient going to a doctor) a toxic element is frequently the cause. Toxin may be derived from putrefaction in the bowel or from a remote infectious process. Under such circumstances a blood analysis is indicated and will frequently determine whether infectious and the type of infection which may be pyogenic, typhoidal, tubercular, yeast, malarial, or other animal parasites.

The focus of infection may be in the jaws, sinuses, nose, throat, lungs, alimentary canal, including liver and appendix, urinary system, regenerative organs, spleen, joints, bone or blood. Hemotological examination will not only determine the type of infection but in cases of specific infections will indicate the location.

The hemoglobin test should always be made when examining the cellular elements of the blood and is usually made by one of the following instruments: Dare's Hemoglobinometer, Sahli Hemoglobinometer, or Tallqvist Hemoglobin scale. Dare's instrument is very simple and most accurate of the three. The Sahli Hemoglobinometer, while being most complicated of the three and not quite so accurate as the Dare instrument, is entirely practical for the general practitioner. The Tallqvist scale is so easy of application that any one can use it if colors can be accurately matched. It is within 10 per cent. of being accurate and will give definite information enough to determine changes in the hemoglobin which are pathognomonic but it is not accurate enough to utilize in determining the color index. For technique in all laboratory analyses refer to Fraught, Simons, and Webster.

The total count and the differential count, or in other words, the *examination* of the *blood cells* both red and white, furnishes information of inestimable value. First the number of red and white cells in a cubic millimeter of patient's blood is determined by diluting with pipettes, using Toison's solution for erythrocytes and one and one-half per cent. glacial acetic acid in water colored slightly with gentian violet for leukocytes.

Now, the number of either of these cells in a cu. m. m. of blood is important, but does not tell the story. There may be 4,000,000 erythrocytes per cu. m. m. of normal size, shape, and staining which would not mean anything very serious in the fact that there were only 4,000,000 red cells. On the other hand 4,000,000 red cells, many of which were abnormal in size, several variously shaped, and one having a nucleus staining blue, would be an entirely different problem. Both had 4,000,000 cells per cu. m. m. One had a very favorable prognosis, the other very unfavorable. If the count be made and hemoglobin percentage not estimated, again the doctor would be groping in the dark.

Erythrocytes abnormal in size and shape are found in severe secondary anemias, primary anemia, and leukemias. Poikilocytes are found in secondary anemias more frequently than are macrocytes or microcytes. Avis type of red cells point strongly to pernicious anemia even though nucleated cells are not found. By avis type I mean red cells which resembles those of the bird being rather large, elongated, and having a clear elongated center. The same type of cell may be found with a nucleus instead of clear center, if the search be continued long enough or if the disease progresses. Microcytes are associated chiefly in severe secondary and in primary anemias. Nucleated red cells, except in very young infants, are found in primary anemia.

## Some Technique Points Difficult to Find in Literature

There are some points in technique which are difficult to find in literature, but which are essential to obtain good results and usually come only after considerable experience and many failures. The acetic acid solution for leukocytes should be colored with gentian violet until it is about the color of Toison's solution. Leucocyte count can be made with Toison's solution and the erythrocytometer if the solution be fresh and contain no

yeast cells. After yeast cells have appeared it can be used for erythrocyte count, but must be either filtered through fine filter paper or replaced with a fresh supply when the cells become numerous (50 to a cu. m. m.), or when erythrocyte count runs 8,000,000 or so respectively. In so far as possible the same dilution should be used all the time, since the counting chamber can be filled with greater accuracy and evenness with a constant unchanging technique.

For a differential count use either Wright's or Jenner's staining solution. It is better to use one or the other; do not alternate. The solution should always be obtained from the same house, for there is a difference in the concentration of solutions obtained from different firms. The thinner the stain the longer it must be applied, and results are less satisfactory. The blood smear *must be thin* and even. The secret of staining is in making the smear. Good smears are made with a smooth, even edge of a glass slide.

In order to have smears uniform bevel the edge of a slide and use the same edge all the time. Once the smear is thin, even, and has been dried in the air hold the slide in solid heavy forceps which, when setting on the level, will hold the slide level. Now cover thoroughly with stain and let it stand five minutes, if using Wright's stain. Then add *distilled* water until a marked metallic luster appears on the stain—usually equal portion water to stain. Leave this on for two or three minutes and wash off. Have a glass containing distilled water handy and immerse slide in same, upside down, until the dark stain color has disappeared and it becomes a pinkish-red. The longer the slide is so treated, the more methylene blue it loses, and the fainter the nuclei become, and the more prominent the eosinophilic granules will be which, with Wright's stain, show very bright red and very distinctly. When looking for parasites in the blood, treat with water less, so that the smear is stained *slightly* darker than for differential counting.

If the above technique be carried out, success is assured.

GODDARD BUILDING.

## PROF. LANE'S ARTICLE

The editor has been permitted to see advance copy of *Osteopathic Health* for October, which is given over to a remarkable article, "A. T. Still, Scientist and Reformer," by M. A. Lane, of the American School, Kirksville. The article is scholarly, to be sure. One will not hesitate to present a copy to the first citizen of his community. The article is historical and compares Dr. Still's thought with that of the foremost thinkers and research men of Europe of his time, but it is not technical, it deals with persons and what they stood for rather than for abstract things, hence the story is readable.

This is a form of literature the profession should welcome. The best people in the community will appreciate it. But they will appreciate it only if they see it. The Osteopathic Publishing Company, the publishers, cannot circulate it to the public. That is up to each one of us in our respective communities. The JOURNAL suggests to each reader that he secure a number of copies of this article and in addition to sending it to patients and former patients send it with a personal note to the prominent people of the community, asking each to read this little brochure for the general information it gives on the important subject of individual and community health. Such action would be in good form and would get for the message a wide reading. Besides this the pamphlet should be in every library which accepts health literature, and your local newspaper editors should not be overlooked.

The JOURNAL is glad to second the efforts of Dr. Bunting, and urges a wide and intelligent distribution of this article. It is a real contribution to our semi-scientific and semi-popular literature. We need more of it. Perhaps we can have it if appreciation of this is shown in a practical way.

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## EDITORIAL

### THE A. O. A.—WHAT IS IT?

In view of changes in By-Laws looking to federated membership with State organizations, and in consideration of the fact that other organizations are being formed sectarian and more or less disorganizing in effect a frank discussion of the A. O. A. seems desirable.

A recognized organization, supported by and representing a majority of the members, is essential to the stability, permanence and highest usefulness of a profession. That the A. O. A., in spite of active opposition at frequent intervals from a few which brings about indifference on the part of many, has fairly met the requirements of such organization, may be affirmed without hesitation or reservation. Let us consider the objects of such an organization.

Primarily it should be responsive to those composing it. It is the aggregate of these and nothing more. It is a membership body. It can occupy, therefore, if it is true to them, nothing but their combined and coordinated position. It can be nothing more nor less than a fair average of its members. As individuals we change our views and positions as we do our clothing. But the aggregate moves slowly, and the professional body represents that aggregate. It is said the majority is seldom right—some few always constituting the vanguard of progress are away in advance; some are laggards through lack of reading and lack of association and conference.

The aim of such an organization must be to hold the advance guard in sight of the main body and to keep intact the line of communication between the two. We need exploring parties and we need a rear guard. Position the advance guard occupies to-day, if it is found to be good ground, the main army will occupy to-morrow, and when all is proven to be well the rear guard will come forward. True, the majority are safest. Many of the restive explorers will be captivated and join other bodies. Not a few of the rear guard will settle down in the ruts made by the main body in passing, and lost to sight. Success means having all three bodies, but keeping together.

The organization, therefore, must be broad and charitable. Of necessity there will be differences of opinion as to what our practice and our relations to various movements shall be. This is well. We need those who are keen to see and appreciate the value in the new, as we need those who resist change and are slow to give up the old. Our platform must be sufficiently broad, and our tolerance must be amply generous to make of it a place for work for all who have the qualifications we must demand—loyalty to osteopathy and due regard for the rights of other members.

This spirit of tolerance is more essential in this organization than it is in other medical bodies. We are young, we are finding ourselves and we must be guided by intelligent, earnest experience. We do not know

what changes may come about, what may be discarded, what may be proved in our evolution. We must determine to be honest as we are determined to be loyal to osteopathy. With this as our creed we are safe. We need all shades of honest, educated opinion, and we need all intelligent effort which is directed toward the trying out of osteopathy in disease. And this must go on for years until some good day we shall know something of the response of the human body to stimuli, the toxic stimuli of disease and of disorder within itself as well as the stimuli of adjustment and harmony of its forces.

When that good day comes we shall be in a position to write our creed, define our limits and set up our requirements for practice. To-day such procedure does not seem desirable. Call the A. O. A. a melting pot if you will; a place in which all who are loyal to the principles of osteopathy may find room; a place in which differences will wear away when experience has proven that which is good. It is a place for growth, but no less a place where growth is directed along given, defined lines.

Again, its function is to stand for the profession, to represent it in its relations with the outside world. Here it must be firm but not arbitrary. We see from different viewpoints many problems, as legislation and our relations toward sociologic movements. There is no reason why we should see these alike. These are questions of expediency, matters which judgment and not conscience must decide. If all are willing to compromise by standing for that upon which we can agree, to accept the best, considering all interests, we should arrive at fairly safe conclusions.

The A. O. A. must represent the profession in the matter of public education. If the individual becomes over-active in this regard a selfish motive will be assigned. Hence the bulk of this work must be done through organized effort, local society, State and National body, where the individual is out of sight. The establishing of clinics, the persistent effort to educate the public to the osteopathic viewpoint, must be undertaken and directed through organizations, and the position of the profession in altruistic and welfare movements should be expressed through resolutions and statements adopted by our National and State organizations. This is necessary if we place this activity on a professional rather than on an individual basis.

Likewise in determining and adjusting our internal affairs a national organization is equally necessary. While not itself a scientific body, its duty is to encourage scientific research and study and development within the profession, and to organize means and movements to bring this about. There exists, for example, a reciprocal relation between the colleges and the profession. The colleges should be grouped as a body and act as a unit. The profession likewise should be grouped as a body and act as a body, through the national association, in neither case to exert force nor make use of power arbitrarily, but as the only way in which the interests of all may be conserved.

In times past we believe these relations have not been clearly understood. Some have seemed to think that the national body used or attempted to use the force of numbers to accomplish certain ends. We think this has not been done; besides we believe this is not the remedy and should never be necessary. Members know where their interests lie, and when they are kept informed they can make their wishes felt by increasing or withdrawing support from any movement or institution. The demand is to bring about greater co-operation and increase the confidence of our institutions toward the profession and of the profession toward our institutions.

As the JOURNAL has said before, a course in any of our recognized osteopathic colleges gives a man or woman the opportunity of doing more good for humanity and gives him the likelihood of making more of a success of his own life than a course in any medical institution of the present day. If this be true, then our duty is to support osteopathy as a profession and support the colleges which are necessary to its growth. But our interest should not stop there, and

in return for this support we must require a thorough equipment of students for the successful practice of osteopathy.

If the profession chooses to exercise its authority it has this matter entirely in its own hands. The schools which in their teaching most nearly meet our conception of how osteopathy should be taught and practiced should receive our support; and if any schools do not so teach it, they need not have our support. In this way the survival of the fittest and the elimination of the unfit, if any such exist, will be brought about in no arbitrary manner. It clearly puts it up to the schools to meet the needs of the profession, and it clearly puts it up to the profession to meet their own needs by thus insuring that character of practitioners which they wish to see multiplied and increased. It is all accomplished through the schools, provided we interest ourselves in sending men and women to the schools as students.

This organization should be no place for cliques, such as fraternal bodies and alumni bodies, to group as such and use these members as basis for accomplishing ends. For social intercourse and renewal of acquaintance they are unobjectionable and are to be encouraged. As surely as organizations with one object in view, such as turning the support of all members of a fraternal organization in a professional way to any one of their fraternity or alumni for no other reason than that he is a member, or if any organization undertakes to vote solidly for the man or the measure the organization has agreed on, we are going to lose our broad and national character, and be torn into "rings" and cliques. In our National and State organizations we must make loyalty to osteopathy and therapeutic efficiency the test of fellowship, and we must arrive at the point where this, and not the question of what college one graduated from or what fraternity he is a member of, is the basis of affiliation and support. The profession, the honorable and efficient men and women composing it, is the big thing, and our first place must always be given to it.

Truth will be found and right will prevail if the National organization does not attempt to exercise a spirit of "leadership," as leadership is generally understood, which means a spirit of domination. Its function should be to encourage experiment, individuality and initiative on the part of its members, to insist upon clinic records being kept, reports being made and these all being compiled and furnished to the profession. Its duty is to keep its members informed as to what all other members are doing as far as possible, and to place at their disposal the facts in the scientific world which have a bearing upon their practice.

However, it must be kept in mind that this is an osteopathic organization, the profession is an osteopathic body, whose prime object is to develop the osteopathic principle and to make the application of facts in regard to healing and health which may be discovered by others working along different lines.

Because it is not arbitrary, because it does not compel, because it does not seek to force all to think and practice alike, and because it does not attempt to weed out those sincere ones who think differently from the majority is no reason that it should be a spineless or colorless organization. It is a place for those who see the same light, for those who are traveling toward it. All such, with increased knowledge and extended experience, will come nearer together as we strive to get the real meaning of osteopathy.

Let the word *education* be our key—not alone for our college work, but for our associated efforts. The great object is to take the student, and the practician who has not seen the vision, to a point where he can see osteopathy. Formerly he could get a vision of it in two years, because he was determined to get a view of it. He knew he wanted that view. He had seen those who had the view and he knew their earnestness and singleness of purpose and their success. Later it has required more time, as we ourselves have contributed and as other sciences have contributed, much which must be incorporated in the study of osteopathy—and as osteopathy widens into the common ground with other systems of practice, and

particularly as other forms of practice become less characteristically drug systems and approach our own, it requires a longer time for the student to get the vision clearly.

Nowhere does the original meaning of the word *educate* apply with such appropriateness as in osteopathy. We must be *led out of* centuries of tradition, and from both conscious and subconscious training, and led to see the truth of osteopathy. Suppose we look at the schools and our association work as being primarily for the purpose of taking men and women to a point where they can see osteopathy—as one looks at the north star—for one's bearings. We all see it. We see it from different angles, we see it to meet different needs, we see it to square with our conception of what the healing art stands for. But if we all really see it we are going toward it, and nothing shall prevent us. To give men and women, and many of them, the view of osteopathy must be the real concern of the profession and for this its organizations are necessary and must exist.

The term "education" is equally applicable, and the need of it equally necessary when our relations with the public are considered. People, too, must be educated, and like ourselves led out of their notions and out of the wrong viewpoint the medical profession gives. The bureaus and departments of our work devoted to this subject have been renamed "public education." We shall not here enter upon the details for carrying out the public education plans, but the means at our hand will be pressed upon us from time to time.

There will be some whose experience, or lack of it, will lead them outside, will lead them to leave the profession, and that is well. It is so in all professions and even trades. Better that those who do not believe in these principles and cannot or will not apply them successfully should go. Loyalty and not numbers assures strength. The demand upon all members must be loyalty to osteopathy. We must be constrained to develop it as a truth because this is an osteopathic profession, devoted to osteopathic truth, and because it is a profession the demand upon all composing it must be a due regard for the rights of all members squaring with the Golden Rule. H. L. C.

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## OSTEOPATHY FIRST.

As the fall seems to open up the work of the year, and particularly because the schools begin new sessions at this season, a few general observations may be appropriate. And we will begin with the new students in the colleges.

"Osteopathy First" should be written on the entrance to every recitation room. It should be believed as a principle by every instructor, and it should be early and definitely fixed in the student's conviction. That was the great advantage the graduate of fifteen or twenty years ago had—he was already convinced of osteopathy when he went to college, his training confirmed his conviction. It did not need to be drilled into him. He went to the osteopathic college because he was convinced and determined to put osteopathy first. He needed to know what it meant and how to apply it.

The average matriculant of to-day needs very much more. He has not come to the study because of sentiment growing out of what osteopathy had done for him or some member of his family, but he has come to it as a business proposition after weighing what it offers as compared with what other professions offer. He must be convinced and made to place osteopathy first. The things that will contribute most to this conviction is that he sees that conviction in all those connected with the college. Do the members of the faculty place osteopathy first, are they thus presenting it as a duty and pleasure, or are they teaching simply as a job? The average student will not be fooled on this point, and this atmosphere about the college is the determining factor in the life of many a physician. No man or woman has a moral right to be about an osteopathic college in any capacity if he does not believe in osteopathy first. It makes little difference how well the fundamental and collateral sciences may be taught or learned,

if osteopathy is not learned with them they are abstract sciences. What is the student going to do with them, what is their relation to an understanding of osteopathy and its practice? Show that and you anchor his faith at every point.

There is complaint that in osteopathic colleges there exists to some extent a condition, notorious in medical colleges, evidenced by the student body cutting classes and rough-house methods by breaking up classes and the like, such as would not obtain or be tolerated in a literary college nor probably in any other technical school. Our conviction is that if osteopathy as a therapeutic force is kept constantly before the student body it will take its work more seriously and conscientiously. No need to wait until the third or fourth year to make the student feel he is preparing to handle human life.

There are strong reasons for keeping osteopathy first in our educational system, and the need of it grows with the addition of each subject to our curriculum. The tendency of modern education is to scatter rather than to concentrate the college graduate's ideals and purposes. There is so much in it, so much is presented which apparently has no bearing upon life's purposes, to be studied merely for study's sake. It has no concrete bearing upon any life activity, so that the student is apt to be more adrift and less anchored and fitted for life's usefulness on graduation than at matriculation at the average university.

The thing most needed in education is the thing most neglected—to give a clear view of *purpose* to life. It is notorious that even our best literary men of the past hundred years have not been college men at all. In surgery and experimental physiology the man who is destined to influence it very greatly and is one of the most quoted authorities in these lines to-day is not a college man at all, and is said to have taken the medical examinations from home study and not from college lectures. The charge can be sustained that university education often takes purpose and well defined determination away from a man, and leaves him adrift with a vast amount of unusable information. Now the point is, so far as usefulness for life goes, college education is not only not necessary, but in many cases is a positive injury where it does not give ideals and fix purposes, but instead dissipates those which the student may have had.

If this is true of the big colleges it is up to our osteopathic institutions to correct the fault. They have an opportunity because osteopathy is a definite system. The students are there to get it. If our colleges can give it to them all will be well. If the colleges cannot give it to them by precept, lecture, laboratory and clinic, and by example in the attitude of instructors and atmosphere of the college toward osteopathy the students are going to have something practical, they are going to have something to apply, something in therapeutics, and we find them demanding drug therapy, and all kinds of specialty work before they have had the basis for it in successful general practice. That is the need of osteopathy first. If that is given first in point of time and pressed as of primary importance it makes not much difference whatever else may be given, that will anchor the student for life, if he has in him that which can be anchored.

Then again the profession needs a revival. The average osteopathic physician with his share of successes and failures is apt to think of his failures, and if he is not posted on drug men's failures and flounderings he does not realize that his own experience is far better than that of the average M. D. But that is not a thing to be satisfied with. Osteopathy is capable of far better results. However, to get these best results a concerted plan must be followed. Our research workers must be supported and encouraged. We must all contribute our experience and knowledge to the common fund. This means we must have a real system of case reporting and compilation. Our literature must present this. Our meetings, local, State and National, must be practical. And every practician of osteopathy must be brought to realize the wide difference between mediocre osteopathic work and that which the practice is capable of doing.

We are not putting osteopathy first as we once did. Perhaps we believe in it more firmly, but less enthusiastically, and we do not take the same pride in its propaganda work. It is no longer new to us, and we are indifferent toward its propaganda and extension, apparently assuming that people generally understand it. As a matter of fact, people generally do not understand it, and our action is rapidly placing the practice in the precarious position where it is not new (and hence takes away the point and justification of explanation and interpretation of it) and still leaves the great body of the public ignorant of its real meaning and the scope of its application. The time will come when we can no longer explain it on the basis of newness, and this fact already gives a new system of imitators propagandistic advantages over us.

Do we want to see osteopathy first? If so, we must awake to our opportunities, or more plainly, recognize the demands made by the times upon us. We must see that osteopathic events are given to the press. We must see that osteopathic literature is in libraries and reading rooms. We must see that our clientele constantly gets real osteopathic literature. We must see that all former patients are reminded at frequent intervals of the osteopathic school of practice, and of what it is accomplishing. Such methods must be used for reaching new people as the sentiment of the community will approve.

The future of osteopathy is bright if we are earnest. If we lose our interest, if osteopathy is not taught, if we in the field do not keep up and practice it at its best, if we are indifferent or neglectful of its advancement and propaganda, it will be taught by the medical colleges and medical men will smatteringly practice it.

This is no scold either against colleges or practicians, but it is a call to serious duty as we enter upon another year of practice. He who places osteopathy first in the race is himself sure of being a good second.

## WANTED—NEW MATERIAL

With the meeting just closed several of the best workers the Association has ever had pass from its official ranks. Drs. Upton, Atzen, Perrin, Becker, named in order of length of service, retire from the board by expiration of term. In addition to this several faithful and efficient members of important committees retire. Some of these people have been worth their weight in gold to organized osteopathy.

Dr. Upton, for example, has been untiring in his efforts, and his excellent ability for organization has been devoted to the profession's upbuilding for twelve years, with the exception of a year or two when ill health made his active help impossible. Dr. Atzen, as trustee first, then as president, and since as trustee again, has served with singular ability and faithfulness. Dr. Perrin has served two terms as trustee, being reelected three years ago to succeed himself, a tribute which his services fully justified. Perhaps no one who has come to the board in recent years has more impressed his fellows by his ability, or whose qualities have more endeared him to his fellow workers than Dr. C. D. Becker, who leaves the board after one term of service.

Now these faithful people go back into the ranks. Their successors on the board have been elected, and no doubt in time they will be equally efficient and dependable as those whom they succeed. But the work is so great, the interests to be served so pressing, that long chances are taken at each election.

The nominating body, composed of a representative selected by each State, together with the members of the board of trustees, offers perhaps the best opportunity for carefully canvassing the names presented, yet it is faced with a serious problem each session, particularly in selecting the trustees.

Then the board makes 25 or more important assignments to departments and bureaus each year, and a hundred as representatives in the several States; and its great concern is to find men and women who have not yet done active work in the A. O. A., but who are capable and willing to do it.

No doubt there are many such; perhaps each year several men and women enter the ranks of practice capable and anxious to do the character of work that is required, and they wonder why their identity is not discovered. And although the membership of the board may be fairly distributed over the country, and although they are on the outlook for these members, they are not able to discover them, at least, as easily as should be.

We hope to offer a practical suggestion. Every member, as soon as located, should *actively* identify himself with the local or district organization if one exists. If not he should lose no time in becoming a member of his State organization. These are always anxious for recruits. They will welcome workers, and in these small groups it is easy to get acquainted and have one's willingness and ability for work recognized. If the membership will take this step it will be easy, early and sure for recognition to come from the national body.

This is not written as a sop to recent graduates. The organization sincerely wants their services more than they want to serve, however ambitious they may be. This is true for the reason that changes are taking place in our colleges, and through these changes consequent changes in practice. It is, therefore, our conviction that at least one comparatively new graduate ought to be elected to the board each year, particularly on account of the new conditions, the new viewpoint they would be able to bring to the board. It does not meet the needs to take men and women, graduates of a dozen years ago, although they may be "new blood" as far as work in the Association is concerned. Yet when ability is so keenly needed, and when the work demanded requires so much sacrifice, those chosen must have demonstrated that they possess the essential qualities.

We therefore urge every A. O. A. member to work with the local and State organization. Particularly would we urge it at this time. Almost every State legislature will be in session the coming winter or spring. Every one of them will consider some health regulation measure or medical practice act affecting our practice. The State organization is the only body which looks after your individual interest in this respect. The Association earnestly urges every member to be identified with his State organization and to go further and urge other non-members to get into the State work. It is not only positively necessary work, but it is the place for organization work and professional advancement and preferment to begin, and having begun there the national organization will be quick to recognize it.

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## THE McCONNELL EDITORIALS.

The JOURNAL has much satisfaction in starting with this issue the Editorial Department forecast several months ago. It congratulates the profession that C. P. McConnell has consented to do the work. Much is being discovered and many methods employed outside of our profession which have practical application to the osteopathic field of practice, and the discussion of which from an authoritative viewpoint will be of great service to the profession.

This work will be approached by Dr. McConnell with the one object in view of its use and definite application to osteopathic practice. Matters of comment and general interest will not be covered in these articles. It is hoped that this very interesting feature will soon be resumed by Dr. Teall, whose work for several years was greatly appreciated by JOURNAL readers.

It is a fact that medical men, in searching for substitutes for drugs in practice are developing many points valuable to our practice, and researches in physiology and experimental work along several lines are casting new light on osteopathic theory and practice. Dr. McConnell will try to give us the essential features from month to month.

## DEATH OF KENDALL L. ACHORN

Dr. K. L. Achorn died in Boston, Mass., Aug. 31, as result of shock and injury when the motor car in which he was riding struck an obstruction and overturned. Dr. Achorn, the son of Drs. C. E. and Ada A. Achorn, was born in Iowa thirty-four years ago, and removed to Boston with his parents in the 90's. He prepared for college and graduated from Harvard University in 1903; he graduated from the American School of Osteopathy in 1905 and subsequently studied three years in Harvard Medical College. He was for eleven years an active member of the First Corps of Cadets, Boston, and was also active in the Boston Athletic Association and Harvard Club. He had served the profession as secretary and president of the Boston Society, president of the New England Society, as department editor of the JOURNAL, and at the time of his death had been appointed by the board of trustees of the A. O. A. to prepare the program for the 1918 annual meeting.

From this brief outline the qualifications of this young man and his willingness to use them for the cause of osteopathy may be readily estimated. Lovable, intelligent, industrious, dependable, his taking away leaves a gap which will not soon be filled. This sad death, together with those of Drs. Harris and Plummer, noted in the last issue, all young, earnest and active for osteopathy, all within a few days of one another and within a radius of a few miles, is a serious blow to the profession.

Recently the writer attended the funeral service of a young man unusually active for the good of the community in which he lived. The minister, recalling this fact, spoke of how the life of a young Man peculiarly active and productive for the good of others had been taken in the midst of its usefulness in Palestine 2,000 years ago. He said there could be but one possible explanation of it, to leave the work he had been doing as a means of development to those he had been training. And so the moral of the taking of these three splendid men must be our increased responsibility, a shorter division, a consequent greater share of the profession's duties and burdens upon us. Let us all strive to get this viewpoint and thus keep alive the feeling that in doing a share of their work we are still working with them. H. L. C.

## HELP US TO REACH THE NEWSPAPERS

Our publication department now prepares each month an editors' sheet of extracts from the Journal or Magazine for the convenience of newspapers in using excerpts from the articles published in the current issue of our monthlies.

We are desirous of sending this sheet, with a copy of the Journal or Magazine, to newspapers interested to welcome them for quotation and review. It is important that we have the co-operation of our readers in getting the names of such newspapers.

We cannot afford to send out the sheet and magazines indiscriminately, but will be glad to send them to the newspapers our readers may recommend as likely to be interested.

# DR. McCONNELL'S DISCUSSIONS

## THE PELVIC COLON IN CONSTIPATION

Several osteopathic physicians have for years to the writer's knowledge paid particular attention to the condition of the abdominal viscera, as may be elicited by careful palpation. The experienced tactual sense will frequently reveal considerable information as to the location, size, vital reaction and various pathological conditions of a viscus. Careful examination of the intestinal tract, especially, is well worth the time and trouble. Dr. Still has for many years favored this method which, of course, is only one method of diagnosis, but nevertheless a valuable one. We feel reasonably certain that a number of inceptive conditions may be detected by careful palpation

when other measures will prove negative. The general tonus of the tissues, spastic areas, adhesions, prolapsed sections, such as the cecum, clogged feces, slight inflammations, etc., may be detected where other means avail but little. But the work must be intelligently and carefully prosecuted with due regard to the anatomy, physiology and possible pathology. Too frequently a careless, rapid and general examination is made that is apt to parallel, in so far as results are concerned, the common hit-or-miss general kneading of the abdomen.

We wish to call attention to a section of the colon and its probable role as a cause of constipation, not that some of the features were unknown before but we would point to the emphasis that recent roentgenologic examinations have given it. We refer to an article by *Case. To quote:

> Mechanical obstruction at the hepatic flexure is not common. Obstruction at the splenic flexure is very rare. Stasis in a prolapsed transverse colon is practically never encountered. I do not seriously consider ptosis of the transverse colon as a cause of constipation, although it is recognized that it may be an associated condition. On the whole, we are forced to conclude that in the majority of cases of constipation not due to malignancy, the cause is located below the crest of the left ileum, and if not primarily due to a spasticity, at least exhibits spasticity as an important factor.
>
> We formerly considered many cases of constipation as due to atony of the bowel muscle. We now have learned that in the majority of cases the bowel is hypertonic. We deal with a hyperkinetic or later a dyskinetic constipation, as Schwartz terms it. The stasis perhaps originally occurs in the pelvic colon, and being allowed through neglect to persist there gives rise to colitis, pericolonic subinfection with adhesions and spasticity. Doubtless many other factors are active, but these three just named may be considered as the active mechanical causes of consumption. As a result, the point of origin of antiperistaltic waves moves distalward and the sum total of the antiperistaltic influence is increased. The right half of the bowel becomes the seat of stasis, chronic appendical and ileocecal valve changes supervene, and finally the stasis extends to the terminal ileum, where its results are much more quickly felt by the organism.

It is instructive to note that normally the calibre of the right colon is twice that of the left, which ratio is increased when there is spasticity of the iliac and pelvic colon. Case's evidence and conclusions are valuable because they are based upon the examination of a large number of patients. It should be noted that it is the flouroscopic examination, not plate work, that is so valuable. The physiology or functioning of the parts can be thus studied, which is of far more decided value than morphologic outlines. The latter in the individual case may be very misleading from the standpoint of physiologic interpretation. It is found that

> The whole colon should be freely movable throughout at all points which can be reached by the manipulating finger. It should be possible to move the tip of the cecum and terminal ileum upward for two or three inches. The ascending colon should be movable laterally for an inch or two. The hepatic flexture is not often within reach of the palpating fingers, although at times the right half of the colon is so very mobile that the cecum, ascending colon, and hepatic flexture can all be pushed over to the left side of the midline. The transverse colon itself is rarely adherent, although sometimes bound down in certain positions by adhesions of the omentum. The two legs of the hepatic loop, that is, the upper part of the ascending colon and the first part of the transverse colon, should be freely separable from each other. The same is true of the two legs of the splenic loop; it is extremely rare for adhesions to exist between the two legs of the splenic loop. The descending colon and the iliac colon are usually fairly movable except at the ileopelvic junction, where the mesocolon is normally very short. The mesocolon is also very short at the pelvirectal junction, but the pelvic colon itself should be freely movable. In heavy patients it is not always possible to test the mobility of the pelvic colon by actual manipulation of its loops, but even in these cases accurate deductions can be drawn from a comparison of the height reached by the pelvic loop during the filling of the colon by an enema and by a meal.

Every osteopath is well aware how frequently a clogging or abnormal fullness of the colon of the right side is found. The essential point of interpretation here is that this is not usually the seat of the primary

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*Case, Roentgenologic Aspects of Intestinal Stasis, Med. Clinics of Chicago, March, 1916. In his description of the colon the newer terminology is used. For example, he does not employ the term "sigmoid." "The iliac colon, from the left iliac crest to the left iliopectineal line; the pelvic colon, from the iliopectineal line to the rectal ampulla."

trouble, but is simply a result of the antiperistaltic movement set up by the enterospasm of the pelvic colon. The fecal clogging is apt to be at a point farthest distant for the spastic area, and in the above condition if the ileocecal valve becomes incompetent the effect is carried still farther. This may be the origin of many cases of chronic appendicitis.

The point we are desirous of developing is a more effective therapy. Although we may not add anything new, still emphasis upon certain features may be acceptable. Dr. Still has for many years in both his spoken and written word repeatedly referred to the frequent lesions that are found in the sigmoid area, particularly contractions, saggings and adhesions. And also many references will be found to these possibilities in recent medical literature. Those who have given attention to this portion of the colon have undoubtedly been struck with the frequent finding of a rope-like condition which when released would be followed by beneficial effects. It is not difficult to detect the condition; indeed, the patient many times can be taught to observe it. (But this is not to imply that other sections of the bowel are to be neglected).

Interosseous lower spinal and pelvic lesions, careless bowel habits, errors of diet, and over-fatigue are probably among the most common causes. All of these can usually be corrected if properly co-ordinated and persistently maintained. The increased tonus and spasticity can best be released by attention to the nervous control, viz., correction of the interosseous lesions, although attention to all possible factors should not be lost sight of. A very valuable and, indeed, essential, treatment where there are subinfections and adhesions is direct local work of the area itself. Something can be accomplished over the section with the patient upon the back with the knees flexed, but by far the most effective work can be done with the patient in the knee-chest position. In this latter position the physician can usually get more or less underneath the spastic area, and with careful replacing and inhibitory manipulation a certain definite release may be secured.

The work, however, should be deliberate and precise, for direct manipulation is necessary, and this calls for the confidence and consequent thorough relaxation upon the part of the patient. In the female advantageous treatment may result by manipulation high up through the vagina, especially if the left tube and ovary is involved, which is not an uncommon complication. Should there be any ulceration direct treatment may increase the spasticity. Then care also should be taken as to possible malignancy and multiple diverticula. The use of the sigmoidscope as well as the X-ray should not be neglected in any suspicious or severe case.

Several osteopaths have devised various treatments in intestinal stasis, based upon diet, fasting, enemas, etc., all of which have undoubtedly been of value. In all instances it is the attention to details that have secured results. For the average case a change in the intestinal bacteriologic flora may be brought about by substituting milk products for meats, with an addition of plenty of vegetables, fruit and water. Having the patient take from two to four tablespoons of whole flaxseed, not masticated, daily is beneficial. One feature of it is that it assists in conveying moisture to the colon. Liquid paraffins no doubt tend to soften the bowel mass, but in the writer's experience the above measures are better. Olive oil, one-half to a full cupful, injected into the rectum just before retiring and left all night, for three or four nights in succession, is of assistance at the beginning of the treatment.

If the patient is watched and treated daily for the first week or ten days, bowels, habits and diet regulated, and the patient instructed to manipulate his own colon, a decided advantage will be obtained. If there is a mucous colitis a couple of pints of milk and cream, half and half, with a free supply of butter and breakfast bacon, and plenty of stewed fruit and raisins daily, will bring about a decided improvement.

C. P. McC.

## DIET IN ECZEMA.

Every practicing osteopath has no doubt treated various cases of eczema, but there have been no doubt instances where all measures apparently met with little success, particularly in the persistent types of the chronic form. Medical texts are notorious in the number of remedies recommended, which clearly portrays the chaotic state of knowledge of etiology and therapy. That the osteopathic school has cured many cases by correcting and eliminating various contributory internal and external factors is well understood, but even with careful attention to diet, lesions that disturb the digestive organs, and removal of local irritants there always remain a certain percentage of perplexing cases.

An instructive article* recently appeared containing valuable suggestions, based upon clinical experimental work, that seems to be well worth the consideration of every practitioner. It is based upon the phenomenon of anaphylaxis. Every one is familiar with the fact that most cases of eczema in infants respond to a change in the dietary. And all are conversant with the usual results of egg anaphylaxis, viz., urticaria and asthma.

It is not our purpose to present the chemical ideas basic to the anaphylactic phenomenon. The chemism of food poisoning and sensitization are well worth special study upon the part of every practician. Although dietetics is a huge subject, and is far from being on a scientific basis, still various entering wedges are gradually penetrating the maze.

The conclusions of the above paper will give one a definite idea of the work:

(A) Eczematous infants usually present in their stools an excess of fat or of starch. An excess of the former element generally means a moist eczema; of the latter, a dry type.

(B) When eczema is present and neither fat nor starch appears in excessive amounts in the feces the physician should look for susceptibility to egg albumen or to milk, or, in default of all these more common causes, to a diminished thyroid secretion.

(C) Susceptibility to egg or to milk can be demonstrated by the new method of food inoculation—a procedure analogous to the Von Pirquet test for tuberculosis and the Schick test for diphtheria.

(D) This cutaneous method can be extended to the study of the action of other food elements in eczematous individuals.

(E) Normal people, so far as we have ascertained, do not react to these tests.

(F) In chronic eczema the great majority of its victims seem to exhibit anaphylactic reactions to one or more types of food substances.

(G) This phenomenon, as evinced in the few instances investigated, seems to be present in other diseases which have been associated in the past with food disturbances, notably urticaria and probably acne vulgaris.

(H) Approximately 20 per cent. of eczematous individuals do not appear sensitized to any of the common food types. These exceptions may denote that all cases of eczema are not due to food sensitization or that special individual articles of food, not tested by us, may be the causative factors. Such exceptions have been demonstrated by pediatrists where, for instance, one child's asthma is produced by English walnuts.

(I) In practically 30 per cent. of these eczematous patients one or more of the controls proved positive. This sign may be considered analogous to the symptom usually observed in urticaria, i. e., dermographism.

(J) In the few cases where both stool examination and cutaneous tests were made there was one contradictory finding. Fat was excessive in the stool and negative on the skin, while starch was present in the feces and negative cutaneously. Further combined examination must be prosecuted in the future to strengthen this whole present theory of the relationship of food poisoning to chronic eczema.

(K) One cannot apparently tell from the type of eczema present what food elements will give positive skin reaction.

The examination of the stool is more or less laborious and requires considerable experience. White has devised a method, referred to in the above, the principles of which seems to be that of the Von Priquet test for tuberculosis and the Schick test for diphtheria. Method:

The upper layers of the epidermis of the flexor surface of the forearm are broken in eight places in two parallel rows of four by the rotation of a dental burr. Neither blood nor serum should be drawn. On the first abrasion is placed a drop of fat-free milk; on the second a drop of egg albumin; on the third a small piece of salt-free butter; and on the fourth a few grains of lactose or a drop of oatmeal water. On the parallel controls nothing is used and the house officer has generally inoculated himself with the same substances each time a patient has been tested. In only one instance in all these opportunities was

*White, The Anaphylactic Phenomenon in Eczema and the Recent Progress in Our Own Knowledge of the Etiology and Treatment. "Jour. of Cutaneous Dis.," Feb., 1916.

fat = moist eczema
starch = dry "
adherent prepuce of causes eczema

there a reaction on the operator, and that to fat-free milk. Simply breaking the surface of the epidermis in this way seems to produce no reaction except in comparatively few instances, but after the food substances have been applied there is a slow and gradual change if the tests are to prove positive. Patients vary, but in the great majority of instances thirty minutes seem to denote the acme of reaction, the rise and decline apparently being approximately equal. The maximum result observed has been a pink-red, elevated papule—never a wheal or vesicle. All degrees of reaction up to their maximum has been noted.

Here is a field of experimentation that every practitioner can avail himself of, and which if carried out in accordance to various possibilities may prove of great practical value. It certainly harmonizes nicely with the osteopathic theory. Of course it is understood that the osteopath should not neglect all possible factors; this is simply an additional arrow to be placed in his quiver. It is well to combine rational methods with the above. C. P. McC.

# DEPARTMENTS

## HOME GYMNASTICS

III.

### BASIC PRINCIPLES OF GYMNASTICS

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To the body the most essential element is oxygen. During activity the amount of oxygen burnt up is so much greater than at rest that, next to pure air, good respiration is most important. Good respiration, according to Ling, was the basis of gymnastics. Unless you can breathe well your physical work is bound to be reduced for lack of endurance. The physical powers will increase with improved respiratory power.

#### Exercise and Respiration

Exercise induces respiration. Even standing position compared with lying position shows a difference in favor of the former. Increased respiration induces more rapid lung circulation and the exchange of gases is increased. Every great muscular effort is involuntarily preceded by an inhalation. This is to supply an abundance of oxygen, and it is also an automatic way of fixing the bones of the thorax that the muscles attached to them may have a firmer anchorage for contraction.

In Parkes' "Practical Hygiene" Dr. Edward Smith's experiments are interesting. According to Posse: "He found that if the quantity of air inhaled in the lying position was taken as a unit, that inhaled at sitting position was 1.18; in standing position, 1.33; walking one mile an hour, 1.90; walking four miles an hour, 5.00, and running six miles an hour, 7.00. Or, in other words, if a man at rest inhales 480 cubic inches of air per minute, while walking four miles an hour he inhales 2,400 cubic inches, and while running six miles an hour, 3,360 cubic inches. The carbon-dioxide exhaled is increased in proportion."

At ordinary inhalation the inspiratory muscles, especially the diaphragm contract, the chest capacity increases, and the air is sucked into the lungs. In ordinary exhalation the same muscles relax, allow a recoil of the air cells, and the air is forced out. Under ordinary circumstances respiration is an automatic mechanical action. When the oxygen supply is low, carbon-dioxide in the blood stimulates the respiratory centre in the medulla to action.

Vital capacity is determined by the amount of air one can forcibly draw into the lungs after completely emptying them. During forced inhalation the ordinary respiratory muscles and a few others contract forcibly to elevate the ribs and completely contract the diaphragm. In forced exhalation, while the inspiratory muscles relax, the expiratory muscles contract forcibly, depressing the ribs and decreasing the chest capacity.

There is but one correct type of respiration for both men and women, that which includes the entire thorax. We have the advocates of the diaphragmatic or abdominal type of respiration. Their claim usually is that this type, through the motion of the diaphragm, acts upon the viscera, giving them a massage and, by producing an oscillation of the intestines, aids digestion and promotes excretion. There is truth in this and their claim rests on sound foundation. But they forget, in their eagerness to defend this type that the costal type has most points in its favor. The apices of the lungs are not there merely for ornament. The first function of respiration is to supply oxygen and purify the blood, not massage the intestines.

There is really no need of bulging out the abdomen at inspiration to exercise the diaphragm. The diaphragm automatically contracts as the first act of respiration, so that if an effort is made to fill the apices of the lungs

by lifting the ribs at inhalation, the entire lungs will be filled, for the bases of the lungs must fill first unless interfered with by tight garments. Air, like all gases, follows the line of least resistance. The straightest and easiest path for air to follow into the lungs is downward to the lower lobes. To pass upward to the apices it has to make a sharp turn at the point where the trachea branches upward. Furthermore cold air cannot rise above warm air. The air coming in is cooler than that already in the lungs and, therefore, a special effort is required to expand the upper lungs while little or no effort will fill the lower lungs.

Another very good reason why special attention should be paid to the apices of the lungs is that there are a great many more end arteries here than at the bases. This means that they are naturally weak and should be favored here. The best way to acquire normal respiration is to centre all efforts toward developing the type which one lacks and then the combination of the two will get most beneficial results, because it will employ the entire thorax and promote oxidation to its utmost possibility.

Respiration is absolutely essential to metabolism. By supplying oxygen it hastens assimilation of waste matter. Absence of oxygen even for a few minutes will cause death. Vitality is largely dependent upon the ability to exchange carbon-dioxide for oxygen. As this ability depends upon the amount of surface over which the blood can be spread in the lungs, and as this amount of surface is determined by the expansiveness of the infundibuli or air-cells, the importance of full, free respiration becomes apparent. The difference between the chest capacity at inhalation and exhalation determines the expansion of the air-cells. The greater this difference the better the respiration. Therefore, the more supple the chest the stronger the inspiratory muscles, and the more elastic the expiratory muscles the better.

The great importance of proper respiration was recognized by Ling when he laid down the law: "Any exercise that compresses the chest or interferes with free respiration must be discarded." In choice of movements in the Ling system this law is always kept in mind. An exercise that causes the pupil to hold his breath is contra-indicated. Even if the exercise is correct from the standpoint of anatomy, physiology or psychology, if the pupil cannot do it without holding his breath it should be postponed until he has developed to a point where he can do it perfectly. This rule seems extreme, but all general rules are extreme in special cases.

The posture of the body during the performance of any movement largely determines its effect. No matter what exercise one practices if he does not preserve a correct posture the exercise will in time prove more injurious than beneficial. The posture of the chest is especially important. To keep the chest in proper posture the head must be kept erect, with the chin drawn in and the shoulders well back. Any movement which requires, or in which is maintained, a good posture of the chest will have good effect. Since the posture of the chest means so much for general effect, every movement must be outlined with relation to its effect upon chest development. As Ling expressed it: "Every correctly executed movement is in a measure a movement for chest development."

The posture of the head and chest are closely interdependent. There are muscles (scaleni and sterno-cleido-mastoid) attached to the head, neck and upper ribs that establish a very close relation between these parts. If one's occupation causes him to stoop over, or the chin to protrude, the consequent relaxation of these muscles allows the sternum to descend and depress the upper ribs. Thus, the chest over the apices of the lungs is diminished in capacity and the air-cells of this region are compressed. If this condition continues for a long time, that is, if it is repeated with sufficient frequency, the clavicular region of the chest will gradually flatten, its muscles will shorten and, finally, no amount of voluntary effort will suffice to expand it.

As the sternum and upper ribs descend, all the lower ribs and the rest of the respiratory apparatus is allowed to settle, and at length the appearance of the chest at inhalation becomes very much as it should be at exhalation. This general settling down affects all the internal organs, so that not only are the lungs handicapped from lack of space, but the heart and large blood vessels are impeded in their functions. The depressed condition of the ribs and sternum also means a lowering of the upper attachments of the abdominal muscles. These muscles, because their extremities are brought nearer together, are easily bulged out by the intestines and, being thus deprived of their support, the abdominal viscera sag, and all this super-induced pressure predisposes to optoses and hernia. In women, the bearing down of the viscera often produces uterine displacements.

With a depressed thorax the respiratory function becomes deficient and oxygen is not supplied rapidly enough to meet bodily needs. The system, thus deprived of oxygen, can at best function at very low ebb. The law that action is the first condition of life is very manifest in the human body, for if the activity

of any portion of position permanently decreases it will grow more and more incapable of performing its function. Thus, when the chest contracts, not only do its muscles shorten and make it still more rigid, but the tissues and air-cells gradually undergo a change of structure and recoil and they finally atrophy and become subject to disease.

To preserve healthy lungs we must make them work, and by doing this we improve general health as well. To accomplish this purpose we resort to exercises that will extend the expiratory muscles and thus supple the chest; next, that will strengthen the inspiratory muscles and expand the chest in every diameter, and lastly, procedures that will cause greater activity of the lungs. Arch-flexions, heaving movements and shoulder-blade movements will supple, expand and correct the posture of the chest and respiratory movements and running games will benefit the lungs by activity.

**Exercise and Circulation**

The forces that keep the blood flowing through the body are contraction of the heart, elasticity of the walls of the blood vessels, force of capillarity and contraction of the voluntary muscles upon the veins. The veins contain valves that compel the blood to flow in only one direction. Centrifugal force may forcibly effect the flow of blood. Swinging on the rings in a circle, or holding onto a merry-go-round going at great speed, with the feet describing the largest circle will cause a rush of blood to them that is sometimes sufficient to produce anemic dizziness or faint.

The effect of exercise on circulation is two-fold. As a muscle contracts it presses on the capillaries and squeezes out some of the blood, while it acts as a stopper to the blood in the veins behind it. The effect of muscular contraction is to temporarily dam up the blood in the veins, especially if the muscle is held contracted for some time. The heart is consequently forced to pump harder, but often without success. The law to be learned is that short, frequent contractions will hasten circulation in the muscles, while a muscle held contracted a long time will offer resistance to the heart. As to the effect of prolonged contraction, we must consider how great a bulk of muscle is under contraction and how long the contraction is continued. Tug-of-war, because it employs all the muscles in a hard and long continued contraction, can never prove beneficial to circulation and health. The best that can be said of this sport is that some people are so strong as not to be injured by it. But the majority had better avoid it.

The pulse is increased by muscular contraction partly by the resistance it has to overcome and partly by the need of arterial blood. The pulse rate is increased by an abnormal amount of carbondioxide in the blood just as it grows more rapid at the presence of any poison in the system. Nearly every toxic condition causes an increase of heart-beat. The increase in heart-beat seems to be nature's way of self-defense against poisons. Heart stimulants are all poisons. Normally, carbon-dioxide stimulates the heart-beats as well as respiration because more oxygen is necessary. The increased heart-beat and respiration produce a greater assimilation of oxygen and excretion of carbon-dioxide and thus more rapidly exchange of tissue. Therefore to make a part grow exercise it properly.

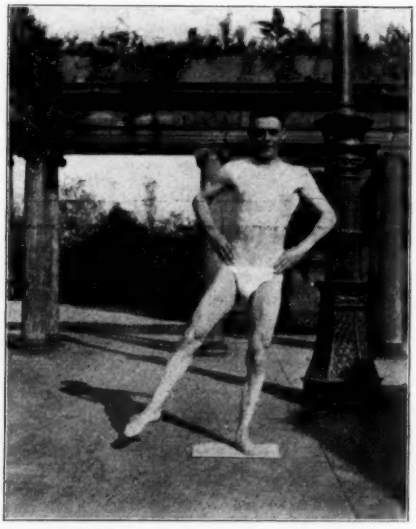

Fig. 32

Sometimes we find a high pulse rate with low blood pressure. This usually indicates an incompetency of the valves to close properly. That is, as a result of heavy athletics or hard labor, the heart has been enlarged rapidly, but the valves failed to enlarge proportionately, and at systole the mitral valve fails to completely close the passage and the blood flows back. In case of regurgitation the heart may compensate by making up in speed what it lacks in efficiency. So where the test shows high pulse rate with normal average pressure there is little to fear if the subject avoids strain. By proper gymnastics such a heart may be gradually built up as any muscle. But if the valvular lesion is due to infectious or contagious disease sequela, gymnastic proced-

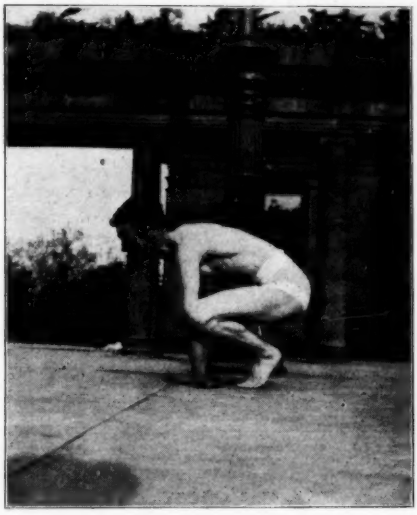

Fig. 33

ures are limited to the passive in usefulness. When there is high pressure and normal or slow pulse we may have hardened arteries. Where there is low pressure and high pulse rate we have a lack of compensation and the condition is serious. It means that the subject is approaching the danger point of heart failure. The proper procedures in such a case have already been given in a preceding number of the JOURNAL.

In gymnastics it is possible to equalize circulation by general and special procedures. In a well balanced gymnastic program the exercises for general effect precede and pave the way for those of localization of special effect. Those who need gymnastics the most are young people and sedentary workers of any age. The time of young people who are, or should be, at school, and of sedentary workers is taken up with brain work, therefore gymnastic lessons are begun with leg movements which may be simple, but require attention. These will draw blood to the legs, relieving cerebral congestion, and change mental activity from intellectual to motor centers.

Movements of extension are most important. Many of the blood vessels, besides pointing upward and compelling the blood to rise against gravity, are bent at acute angles. The blood, as any liquid, flows best in a straight line because of less friction. In our daily routine we naturally flex our joints much more than we extend them. A flexed joint means bent arteries. Extending them makes the blood flow easier. Therefore movements of extension should occupy a prominent position in a gymnastic program. A bed patient with a weak heart may often gain relief by lying on the back with the arms straight out from the shoulders to straighten the axillary arteries.

Vascular expansion movements may be overdone. They should only be employed when their need is indicated. The normal heart must have compensatory resistance. Great peripheral resistance may strain it, therefore heavy and long continued exertions are bad. Vascular expansion movements practiced when not needed may reduce the heart's natural resistance to the point of danger. The heart's condition, properly interpreted, indicates the kind of movements it needs.

Respiration and circulation are closely related. Thoracic aspiration is an aid to circulation. It occurs at deep inhalation. The capillaries and infundibuli in the lungs are separated by common walls. Through these thin walls the exchange of gases takes place by osmosis. It is readily seen that if the infundibuli are expanded by deep inhalation, the distention of their walls means an equal distention of the capillary walls, and therefore an increased capacity for blood in these capillaries. This, therefore, causes a suction force on the blood to the lungs and, if exhalation is not too rapid, the readjustment is such as to aid the flow from the right ventricle, and it will not retard the flow to the left auricle. A rapid exhalation is liable to cause lung congestion and interfere with pulmonary circulation. Hence, to aid the heart, inhalation should be a little more rapid than exhalation. The frequency of respiration is reflexly regulated according to the need.

Respiratory exercises may be active or passive. But the effects of either kind are in general as the effects of all passive movements. Passive movements aid circulation as a rule by draining a part. Active movements

Fig. 34

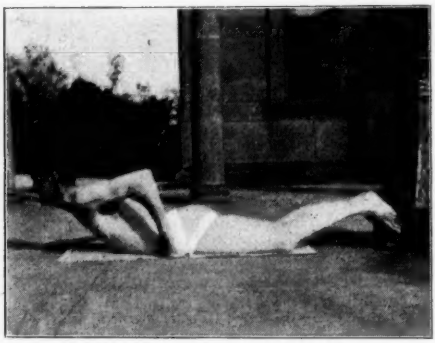

Fig. 35

usually cause an afflux of blood to a part. To flush a part, therefore, give it active movements; to drain a part give it passive movements, and at the same time active movements to some distal part.

MENTOR BUILDING.

**Lesson V**

I—(1) Raise the arms forward-upward slowly, at the same time rise on the toes and breathe in, (2) lower the arms sideways-backward, lower the heels slowly and at the same time breathe out.

II—(1) Bend the arms (2) stretch them forward, (3) bend them, (4) stretch them upward, (5) bend them, (6) stretch them sideways, (7) bend them, (8) stretch them backward. Repeat the series a few times.

Flex the arms slowly but put all the energy possible in the extensions.

III—Raise the arms sideways to shoulder height. Kneel. In this position turn as far as possible to the left and then around to the right, and so on.

IV—Hands on hips; feet apart. Turn the body to the left. In this position bend the trunk backward two or three times. Repeat with the body turned to the right.

V—Hands on hips; feet close. Without flexing the knees and keeping the head up, bend forward as far as possible a few times.

VI—Hands on hips; feet apart. Lift the heels and, keeping up on the toes, flex the knees to deep bend a few times. (Fig. 22, with feet apart.)

Keep the trunk erect and the head up while doing this movement.

VII—Hands on hips. (1) Raise the left leg sideways; hold it up for a few seconds, extending the foot, (2) lower the leg, (3) raise the right leg sideways, (4) position. (Fig. 32.)

While performing this movement do not allow the body to bend over to the side opposite that of the upraised leg. To keep the trunk erect shows good control.

VIII—Flex the arms forward. (Fig. 19 a,a.) (1) Fling them sideways forcibly and at the same time lunge forward with the left foot, (2) come back to position, (3) fling the arms and lunge with the right foot, (4) back to first position. Repeat several times.

IX—Bend the knees (outside the elbows) and place the hands on the floor, fingers pointing inward. (Fig. 33.) (1) In one spring place the feet back far enough so that the body is in a straight line from the heels to the head, (Fig. 34). (2) In one spring bring the feet back to the first position. Repeat.

X—Lie on the floor, face down. Place a weight on the feet. Hands on the hips. (1) Arch the body upward, getting the head as far as possible from the floor, (2) down. Repeat several times. Do not hold the breath while doing this movement. (Fig. 35.)

XI—Feet apart; left arm stretched upward and the right hand on the hip. (1) Bend to the right as far as possible, allowing the arm to curl over (2) stretch upward. Repeat a few times and then with the right arm up and the left hand on the hip bend to the left a few times. (Fig. 36.)

XII—Jump upward with a half turn to the right and then to the left. (1) Rise on the toes, (2) bend the knees, (3) jump, and while the body is in the air, turn so as to land with the back turned in the direction you were facing, (4) stretch the knees, (5) lower the heels.

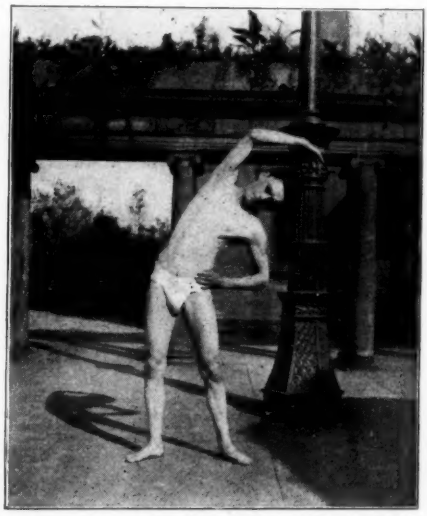

Fig. 36

XIII—Keeping the chest well forward over the toes, chin firmly drawn in, and keeping the elbows straight, fling the arms forward-upward forcibly several times.

XIV—(1) Raise the arms sideways-upward, rise on the toes and at the same time breathe in deeply, (2) lower the arms and the heels at the same time breathe out. (Fig. 27, 1,1.)

# MENTAL THERAPEUTICS

## PSYCHOLOGY—EMOTION

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In human beings instinct and emotion are both psycho-physical processes, and it is difficult to separate, in description, the instinctive reactions from the emotional conditions and reactions, which the same object may provoke. An object that excites an instinct also excites an emotion. But this distinction may be made: the object that excites the instinct causes the one excited to change his relation in regard to the exciting object. For instance, if one finds himself in a pasture with a vicious bull he seeks to place himself beyond the reach of the vicious animal by fleeing to the nearest fence, and he does not stop running until he has reached the opposite side of the fence from that occupied by the vicious animal, while the purely emotional reaction terminates within the body of the one acted upon.

It is impossible to enumerate the different varieties of emotion, but they may be divided into two classes, the coarser and the subtler. The coarser includes fear, love, hope, anger, grief, joy, pride, shame, disgust, etc., and the subtler moral, intellectual and aesthetic feelings. Formerly works on psychology gave merely descriptions of the emotions, but all are well enough acquainted with them so that it is not necessary to describe them, but rather we shall attempt to discover how they act and what are their effects upon the body.

When we consider the organic activities which produce emotion they are found to be very complex processes. These activities are set up in the muscles of the respiratory, digestive and circulatory tracts. They are complex responses to complex situations, but they do not differ in principle from the simple reactions of the simple sensations. Every emotional state is marked by some characteristic action or inhibition of action, or by relaxation or tension and centrifugal effect, like blushing or growing pale, laughing or crying, trembling and perspiring. So we find that any theory of emotion must take into account all the actions and reactions of the muscles, glands, blood vessels and their conscious effects. A study of these psychological accompaniments will be of great service to the physician, especially in connection with nervous and mental diseases.

Prof. James says: "My theory is that *the bodily changes follow directly the perception of the exciting fact, and that our feeling of the same changes as they occur is the emotion.* Common sense says: we lose our fortune, are sorry and weep; we meet a bear, are frightened and run; we are insulted by a rival, are angry and strike. The hypothesis here to be defended says this order of sequence is incorrect, that one mental state is not immediately induced by the other, that the bodily manifestations must first be interposed between and that the more rational statement is that we feel sorry because we cry, angry because we strike, afraid because we tremble, and not that we cry, strike, or tremble because we are sorry, angry, or fearful, as the case may be. Without the bodily states following on the perception, the latter would be purely cognative in form, pale, colorless, destitute of emotional warmth. We might then see the bear and judge it best to run, receive the insult and deem it right to strike, but we should not actually *feel* afraid or angry.

"To begin with, *particular perceptions certainly do produce widespread bodily effects by a sort of immediate physical influence, antecedent to the arousal of an emotion or emotional idea.* In listening to poetry, drama or heroic narrative we are often surprised at the cutaneous shiver, which like a sudden wave, flows over us and at the heart swelling and lachrymal effusion that unexpectedly catches us at intervals. In hearing music the same is even more strikingly true. If we abruptly see a dark, moving form in the woods, or heart stops beating, and we catch our breath instantly and before any articulate idea of danger can arise.

"The best proof that the immediate cause of emotion is a physical effect on the nerves is furnished by *those pathological cases in which the emotion is objectless.* One of the chief merits, in fact of the view which I propose, seems to be that we can so easily formulate by its means pathological cases and normal cases under a common scheme. In every asylum we find examples of absolutely unmotived fear, anger, melancholy or conceit, and others of an equally unmotived apathy which persists in spite of the best of outward reasons why it should give way. In the former cases we must suppose the nervous machinery to be so liable in some one emotional direction that almost every stimulus (however inappropriate) causes it to upset in that way, and to engender the particular complex of feelings of which the psychic body of the emotion consists."

Thus, to take one special instance of what is known as morbid fear he says: "A friend who has had occasional attacks of this most distressing of all maladies tells me that in his case the whole drama seems to centre about the region of the heart and respiratory apparatus, that his main effort during the attack is to get control of his inspirations and to slow his heart, and that the moment he attains to

breathing deeply and to holding himself erect the dread, *ipso facto,* seems to depart. The emotion here is nothing but the feeling of a bodily state, and it has a purely bodily cause.

"The next thing to be noticed is this: that *every one of the bodily changes, whatsoever it be, is felt, acutely or obscurely, the moment it occurs.* If the reader has never paid attention to this matter he will be both interested and astonished to learn how many different local bodily feelings he can detect in himself as characteristic of his various emotional moods. * * * When momentarily embarrassed it is something in the charynx that compels either a swallow, a clearing of the throat or a slight cough, and so on for as many more instances as can be named. The various permutations of which the organic changes are susceptible make it abstractly possible that no shade of emotion should be without a bodily reverberation as unique, when taken in its totality, as is the neutral mood itself. The immense number of parts modified is what makes it so difficult for us to reproduce in cold blood the total and integral expression of any one emotion. We may catch the trick with the voluntary muscles, but fail with the skin, glands, heart and other viscera.

"I now proceed to urge the vital point of my whole theory, which is: *If we fancy some strong emotion* and try to abstract from our consciousness of it all the feelings of its bodily symptoms, we find we *have nothing left behind,* no "mind-stuff" out of which the emotion can be constituted, and that a cold and neutral state of intellectual perception is all that remains. * * * Can one fancy the state of rage, and picture no ebullation in the chest, no flushing of the face, no dilation of the nostrils, no clenching of the teeth, no impulse to vigorous action, but in their stead limp muscles, calm breathing and placid face? The present writer for one, certainly cannot.

"If such a theory is true, then each emotion is the resultant of a sum of elements, and each element is caused by a physiological process of a sort already known. The elements are all organic changes, and each of them is the reflex effect of the exciting object. * * * The questions now are *causal*: Just what changes does this object and what changes does that object excite? And how came they to excite these particular changes and not others? * * * Now the moment an emotion is causally accounted for, as the arousal by an object of a lot of reflex acts which are forthwith felt, *we immediately see why there is no limit to the number of possible different emotions which may exist, and why the emotions of different individuals may vary indefinitely,* both as to their constitution and as to the objects which call them forth."

We have found thus far in our study of the various mental processes that each one contributed in some way to the economy of mental life. So now we ask what is the genesis and real function of emotion, and can we discover any reason for the difference in the qualities which the different emotions manifest? Some account for the genesis of emotion as the remains of acts which were formerly more useful, either biologically or socially, to the organism than now because of development or evolutionary processes. Thus Darwin accounts for the sneer—what remains of the times when our ancestors had large canine teeth and uncovered them when they attacked their enemy. Wundt considered the reddening of the neck and face a compensatory arrangement for relaxing the brain of the blood pressure which follows the rapid heart beat of excitement.

Angell says: "The peculiar feeling which marks each emotion off from other emotions is primarily due to the different reactions which various objects call forth. These reactions are in turn determined by circumstances which may lie indefinitely far back in the early history of the race, but in each case they required for their effective manipulation special forms of co-ordination. The co-ordinations which served these ends were necessarily useful, and so tended to become fixed as organic heritages." It cannot be denied that some emotional states are beneficial while others are harmful to the organism, and much yet remains to be learned concerning them. But one thing is sure, as Munsterberg says, "The emotion secures for the action what the attention secures for the ideas." An emotion focuses every energy on the one desire or object and inhibits every other idea, impulse or desire to any other action.

To the physician these physiological actions and reactions of the emotional states are of great interest and importance. They have many and far reaching effects on muscles, nerves, glands and blood vessels. Recent research points to the great importance of the chemical substances which the ductless glands pour into the blood. For instance, it has been found that when a cat is frightened by a dog the adrenals immediately secrete adrenalin into the blood. Under these conditions the adrenalin in the blood contracts some and dilates other blood vessels and regulates the blood supply in a most useful manner. The abdominal blood vessels are contracted and the blood is forced into the limbs, lungs, brain and

heart. These are the organs that would be brought into vigorous action, either in flight or attack, and thus nature prepares them for this extraordinary effort.

Concerning this Munsterberg says: "We hardly have the right to say that the emotion is the cause of the adrenalin production, inasmuch as these effects of the adrenalin must be acknowledged as essential parts of the emotion. On the other hand, the mere perception of the irritating or frightful object cannot possibly stimulate the activity of the adrenalin gland if there is no preceding impulse to attack or escape." Hence we should say that the barking dog arouses in the cat first the motor impulse to strong reaction movement of aggression, or flight, and that this excessive motor impulse works on the lower nerve centers as a stimulus for adrenalin secretion. A few seconds later the gland has done its work, has thrown its product into the circulation and through the chemical influence of this substance on the nerves the true emotional process is released in the service of the intended action. Every true emotion probably begins with such a characteristic motor reaction which arouses gland activities through which the whole organism becomes reset and usefully prepared for maximum efficiency.

But we know that some emotions produce the opposite effect from that stated above. A case like the following is an example: A mother becomes very angry, and shortly after her fit of anger nurses her little baby and it dies. Her fit of anger poisoned her milk and killed her child. There are said to be well authenticated cases of this kind. Take another example: In intense grief the gastric juices are not secreted and there is little or no desire for food, and if food be taken it does not digest. It would seem that investigations made along these lines would be fruitful of much good.

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# OPHTHALMOLOGY

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In 1913-14 this department was begun and carried through the year. We discussed the examination of the eye and began to write on diseases of the conjunctiva, of which conjunctivitis was the first. A classification of conjunctivitis was given, P. 400. Osteopathic causes were given, P. 522. The cause and treatment of cartarrhal and follicular conjunctivitis were given, P. 658, also the differential diagnosis between follicular conjunctivitis and trachoma. It is our desire at this time to continue further our discussion of the forms of conjunctivitis.

*Gonorrhoeal Conjunctivitis.* This disease is sometimes called purulent ophthalmia or acute blennorrhea. It is caused from an infection of the conjunctival sac with the gonococcus of Neisser. Contact with soiled fingers or linen may transfer the germ.

*Symptoms.* Within 12-48 hours after inoculation the first symptoms of redness and irritation occur. This is soon followed by much swelling and tension of the lids and chemosis of the conjunctiva. There is much pain and a copious discharge of pus coming from beneath the lids. At first the pus is yellow or yellow green.

Later the symptoms begin to subside; there is less tenseness and heat; the lids can be more readily everted and the discharge ceases after six or eight weeks. The puckered conjunctiva becomes rough and granular.

In these cases the *prognosis* is always grave; more than in ophthalmia neonatorum. The eye is most always marred in some way. One of the great dangers is involvement and destruction of the cornea. If the cornea becomes hazy soon after symptoms begin it is not a good omen. Ulcers will likely form and then there is a tendency to puncture of the cornea. In mild cases the cornea may escape without injury. In severe cases it is likely to ulcerate. If it perforates, the anterior chamber is emptied and the iris prolapses into the perforation, adhesion takes place, and there is heating with reformation partially of the anterior chamber. An adherent leukoma is the result with practical loss of vision. There may be a bulging of the cornea known as anterior staphyloma. The iris and ciliary body may become involved as an iritis and cyclitis, or the whole inner structures may be affected, making a pan-ophthalmitis with atrophy of the eyeball.

The cornea is affected by the infective material direct or the nutrient vessels to the cornea at the limbus may be obstructed by the extreme swelling and pressure.

Complications of arthritis, rhinitis, septicemia and endocarditis may arise. If there is none of these, at least there is a general debilitated condition which needs attention.

*Treatment.* The treatment should be local and constitutional. The diagnosis should be made quickly from the history and the microscope with the symptoms and local cleansing begun at once and followed diligently. Excessive discharge should be wiped away with cotton. The conjunctival sac should be thoroughly irrigated every hour or oftener if necessary to keep it clean. This is to be done day and night. A saturated solution of boric acid may be used or corrosive sublimate one grain to the pint or permanganate of potassium solu-

tion 1-5000. The irrigation should be followed by the free use of argyrol 25 per cent. This procedure will keep the eye clean and be the means often of saving the cornea from destruction and the eye from blindness.

If there should be ulceration of the cornea a drop of atropine one-half per cent. should be used in the eye often enough to keep the pupil dilated and the ciliary body at rest.

Osteopathic physicians no less than other physicians should not neglect this local careful persistent antiseptic cleansing of the eye in such cases. The osteopathist can do more. He is not limited to antisepsis even in this kind of work, however important it might be. The other eye should be carefully protected if only one is involved. Many use a Buller's shield, which consists of ceiling the eye around with a watch crystal over it.

The osteopathist should give thorough treatments to the neck and the fifth nerve.

Supporting treatment to the system according to indications should be given e. g., bowels, kidneys, nerves, muscles, joints as in constipation, nephritis, neuroses, rheumatism, arthritis, endocarditis, septicemia, rhinitis, etc.

(Next month Ophthamia Neonatorum).

535 Majestic Bldg.

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# RESEARCH

Louisa Burns, D.O., Editor.
A. T. Still Research Institute.

## PRELIMINARY STUDY OF LUMBAR LESIONS IN WHITE RATS

Louisa Burns, D.O., Grace L. Smith, D.O., and J. H. Edmiston, D.O.

In order to decide whether an exhaustive study of the effects of lumbar lesions in quadrupeds was advisable, a prelminary study was made of a few white rats, November, 1915—August, 1916. Altogether four dozen rats were used, of which eighteen females and eighteen males were lesioned.

Fifteen lesioned females were placed in families of three or four each, with one normal male in each family. This was done in November. It was intended to study the effects of the lumbar lesion upon the development of the young. One rat was pregnant when the lesion was caused. The young were born and eaten during the night a few days later. No other pregnancies occurred until in June, when one rat appeared to be nearing full term. She died during the night. Autopsy next morning showed a large cyst upon the right ovary, which involved the right kidney in its wall. This cyst was lined with what appeared to be placental remnants. No sign of fetus or embryo could be found. The tissue is being prepared for microscopical examination. This may have been an ectopic gestation.

Several of the lesioned females died or were killed during the winter; congested uterus and ovaries and inflammatory conditions around the ileo-cecal region were constant. The ovary of one was put up in paraffine and sectioned; the slides show active congestion with some diapedesis. Non-lesioned animals killed during the same time showed no ovarian or uterine disturbances, and in only a few did inflammatory indications around the ileo-cecal region appear. Normal animals bore young with ordinary celerity and frequency.

The lesions were made by rotating the upper lumbar spine upon the lower; the point of lesion was at about the third or fourth lumbar. It was not possible to localize these lesions exactly in such small animals. The animals were examined at intervals, usually of one week, and if the lesions were not easily perceptible the manipulation was repeated, until the lesion was certainly present. At least two, and usually several, persons verified the lesion by independent observations. In a few cases the diagnosis was confirmed by the X-ray. This was not done in more than a few cases lest the effects of the X-ray should interfere with the validity of the findings.

The males were lesioned in several ways—a few were operated under anesthesia and the lumbo-sacral articulation separated. Others had lesions in the lumbar region produced by stress, as in the case of females. These lesions were repeated, as in the females, but the lesioned males were not mated. The males also died or were killed at intervals during the winter. In a few instances priapism followed the production of the lesion. This persisted more than 24 hours in one instance, but disappeared within a few hours in others. In a few cases it disappeared within a few minutes after the animal was placed in the cage. Inflammatory adhesions and cysts were present in each lesioned male, and were present in a few non-lesioned males.

The findings in these animals were fairly constant in many respects, and the results of the test were sufficiently pronounced to warrant the use of a larger number of several different mammals during the coming year. A full report of the work done with these animals will be published in a later Bulletin of the Institute. This preliminary report is being made because of its bearing, even in this incomplete form, upon the problems of sterility in the female, of priapism, and of appendicitis.

# CORRESPONDENCE

## OSTEOPATHY IN THE PUBLIC SCHOOL

Since my first acquaintance with osteopathy I have believed that its foundation truth was destined to revolutionize the teaching of physiology in the public school, and that educators would welcome this new thing if it were brought to their attention. For the encouragement of others I shall briefly review my experience during the past year.

In September, 1915, the superintendent of schools invited me to the weekly assembly for an address to the students on the history of osteopathy. He had no experience with it, and only such knowledge as he had obtained about town and from the *Osteopathic Magazine,* but he was convinced that a knowledge of it should be included in an educational course. Of course I accepted. On the morning I selected one of the local pastors happened in and followed my address with a brief talk, emphasizing the importance of this new teaching. He stated to me and the superintendent of schools that "osteopathy should be in the public schools, which are to prepare boys and girls for life, and they need this."

It was about this time that I was approached by the chairman of the text book committee of the board of education with an invitation to come into the next board meeting with the school medical inspector, to go over the subject of the teaching of health and hygiene. This inspector gave me the hand of fellowship and has always been courteous. Having given the subject more or less attention I was able to offer quite accurate report as to the reform work undertaken by certain States. I could speak also with certainty on the question of suitable texts (there ain't none). I made no reference to osteopathy, but did air my opinions concerning the inefficiency of the schools in this department, and advised that no division between sexes be made, at least in the beginning. I said my say to the end and went home.

In the discussion which followed the body became divided on the question of sex teaching, and the motion was laid over. But before the next meeting an S. O. S. came to me from the superintendent. He had been disappointed in his plan of a short talk by an outsider at the weekly assembly. Would I fill the gap and tell them more about the laboratory demonstration of the osteopathic truth. A second dose of straight osteopathy to the pupils seemed hardly wise, so I took with me an articulated spine, and discussed spinal hygiene. (This talk has been presented in part in the *Osteopathic Magazine*). But the spine was unsatisfactory for the purpose and the idea of using stereopticon slides came.

After the first talk I felt I had the following of the audience. I was interested and ready to go on. The students and faculty took it for granted that I was going on. Meanwhile the school board was unsettled on the question of sex teaching. Just at this time a decision had to be made concerning the new year in the *Osteopathic Magazine.* If my department was to be continued it must be planned. So I made a counter proposition to the school board. If they would grant me the right to use whatever material I wished in the *Magazine* I would work with them and the faculty on the problem gratis.

My offer was accepted with thanks and a member of the board appointed as censor, to satisfy the anti-sex teaching contingent. They might have spared themselves the pains. I have refused invitations to speak to girls, because I am not decided concerning method. The effort has fulfilled our highest hope. It has meant publicity of the best kind. The response from the children has been generally pleasing, and parents have appealed to me for advice. The course was given proper notice in the 1916-17 catalog. I have been asked to confer with the teachers on the physical side of school problems, in the conference now in session in subtitution for regular school work, owing to the epidemic. Some calls came to me from neighboring schools. Recently I was requested by an adjoining borough to fix a price for the same sort of co-operative work I have done here.

I have a right to live, but in addition to bread and butter I want a recognized place in the community for my science. And this school work has helped to this end. I am an advocate of a gospel of correct posture, sane living and body control in the name of efficiency. The school merely stamped my preaching with its approval.

So far I have concerned myself merely

with incorporating my beliefs and ideals into my own practice. On the aside I have sounded such educators and leaders of thought as I have been able to reach, and without exception these agree as to the ripeness of time for a new and improved teaching and concerning osteopathy's peculiar fitness to meet the need. It is the unanimous opinion that if osteopathy will organize to aid with these problems it will render a valuable service. Such an organized movement is very possible, given the co-operation of a profession interested in the problem, and would yield much-to-be-desired returns with the public for us. Doctor, if you are interested, will you write us?

JENNIE ALICE RYEL, D. O.

HASBROUCK HEIGHTS, N. J.

## NATIONAL LEAGUE FOR THE PREVENTION OF SPINAL CURVATURE

The purpose of this League is to conduct research work and educational publicity to the degree of establishing nation wide a system of prophylaxis to prevent the present and future generations from developing spinal curvatures, also the establishing in time of additional clinics to correct existing curvatures.

Realizing the great number of ailments arising from existing spinal lesions and curvatures there seems to be a broad field untouched by any organization. While societies have been formed to help develop the child physically and assist him in assuming correct postures, yet to our knowledge no society or league exists that has embodied in it the mechanical treatment phase that prevents the development of curvatures by corrective work.

The beginning of a curvature usually arises out of a specific spinal lesion, and the correction of these lesions prevents curvatures. The slipping of an innominate may cause a child or adult to walk incorrectly, and terminate in the development of a curvature. It is the purpose of this League to call the attention of parents and guardians to this particular phase of mechanical corrective work and assist in every way possible the prevention and correction of lesions and curvatures.

From time to time the League expects to issue booklets and charts that will instruct people, in the way of object lessons, how to make future generations a race of non-scoliotics. It is possible to prevent any child from developing a spinal curvature, and within a decade we hope to see a system of school inspection so perfected that no child will be allowed to grow up with a curvature.

Within a year or two we hope to work out a plan whereby the League will be self-sustaining. For the present we already have promises for several hundred dollars. If the osteopathic physicians will enter as charter members and send the secretary $1, the present year will be a success. Every cent will be accounted for and used to good purpose. The Board of Directors will vote on all appropriations, however small, and regulate the various expenditures.

No official will in any way receive a salary. The work is to be done for the love of it. "Save the kiddies from curvature" is our motto. Who is there among us that will not join the League and help boost it?

So far not a single physician to whom we have addressed our appeal has written other than the most encouraging words. Letters are coming in every day saying, "Go ahead; we like the idea and we are back of you." This makes the work light.

The work of organizing of a national league, including the expenditure of time, postage and stenographic bills will be done by the managing director and secretary without the use of any of the League's funds.

GEO. W. REID, D. O., *Secretary.*
F. P. MILLARD, D. O., *Managing Director.*

## WHAT CAUSES POLIOMYELITIS?

Some years ago I made the statement in an osteopathic publication that I had never seen a case of poliomyelitis that did not have a history of trauma or exhaustion. This opinion was based on examination of some fifteen cases then in the chronic form, and the following two are characteristic:

Girl, age 5, paralyzed in both legs, fell from the veranda, and catching one leg in the trellis hung for some minutes. Developed the disease in 36 hours. No case in town for many months previous, nor did one develop after. Marked fifth lumbar and innominate lesion.

Girl, age 17, played tennis to complete exhaustion and developed the disease after 48 hours. Lived in the country, and there had never been a case there before nor since. Left leg paralyzed, fifth lumbar and innominate lesion.

These cases were treated several years ago, but since the outbreak of this season I have had the history of many cases, and found in all a history something like the above. For instance in one family are three boys, all afflicted. The first fell from the back of a wagon and was paralyzed in 48 hours. The second

fell down stairs and was paralyzed in 60 hours, and the third, the father is certain had a fall, although it could not be determined, and before I had suggested it, the father was certain that the falls were the exciting cause.

I find that Dana in an older edition gives exhaustion as a cause for the disease. That was before every disease had to have its own private germ to develop with. I have no theory why children who are falling all the time should be more prone to the disease at certain times than at others, but I am on as safe ground as those who insist that it is both contagious and infectious yet cannot say how it is transmitted nor by what means. In a record of more than 2,000 cases but fourteen homes had more than one case. That does not look as if it were highly contagious. It would be of interest to have all osteopaths who may treat infantile paralysis report their observations along the line I have given.

CHARLES C. TEALL, D. O.
FULTON, N. Y.

EDITOR'S NOTE: The JOURNAL urges all osteopathic physicians who have treated cases in the acute stages, either in the recent epidemic or previously, to report the same for the next issue of the JOURNAL. If the results of the work done could be grasped it might make a strong impression.

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## KEEPING CASE RECORDS

During the past year I have evolved a system of keeping case records which is easy to keep yet records accurately, thoroughly and systematically all of the essential facts concerning each case. When a patient comes into my office for the first time I do not trust to memory to get the facts concerning his trouble, but I begin immediately to make my record while he talks about his ailment. This is the only accurate way I know of.

In getting his story I do not let him talk about irrelevant details, but hold him to the essential points in the following manner: First I usually ask: "What bothers you most?" His answer I write on a sheet of ordinary note size paper headed as follows:

Subj. Symptoms I. J. C. Miller.
July 11, 1916.

A. Pain in Epigastrium.

Of course I translate into concise, scientific terms, as much as possible the patient's language, and I endeavor to get concerning each complaint answers to the following questions:

(a) What is the severity of this trouble? (b) Just where is it located? (c) When did it begin? (d) Did it begin gradually or suddenly? (e) To what do you attribute it? (f) Does it bother you all the time now? (g) What, if anything, seems to relieve it? (h) What seems to aggravate it? (i) Have you had similar trouble in the past? (If so) when? (k) How long did it last? (l) What treatment did you take? (m) And with what effect?

The answers to these questions I record under the chief complaint as follows:

(a) Mild. (b) In epigastric region. (c) Began years ago. (d) Gradually. (e) Probable causes unknown.

The letters in parentheses I put in after the patient is gone, leaving space for them as I make my notes. They serve a valuable purpose, as I will explain later. Of course, I abbreviate, and wherever I can I record the patient's own words. It isn't essential to get all the answers at the first interview or in the order given, but it is advisable for the young doctor to outline and memorize the set of questions, as it is comprehensive and fits practically every complaint.

I insist that the patient tell about only one complaint at a time, any others that may be mentioned incidentally being taken up later and in the same manner as the chief complaint, recording them on a separate sheet or on the same sheets with lines between them. Each patient's name in the upper right hand corner and the title of the subject matter or its abbreviation, e. g., "Subjective Symptoms," in the upper left hand corner. This avoids losing sheets. The sheets may also be numbered consecutively.

Next I begin a physical examination of the patient, recording in a similar manner as with the symptoms, for example:

A. General data.

(a) Age 75, (b) thin, (c) male, (d) unduly nervous, (e) weight 130, (f) complexion dusky, (g) cheeks red, (h) temperature 98.2.

B. Cardiovascular system.

(a) Heart rate 62, (b) diastolic blood pressure 100, (c) systolic blood pressure 143.

After the patient is gone and at my leisure I go over the data recorded under Subjective Symptoms and under Physical Examination, and make out other sheets headed Differential Diagnosis. At the top of one of these I write the name of one of the symptoms, e. g., "Pain in the Epigastrium," and under it I make subheadings of the names of the conditions which I think most likely to be the cause or causes of the symptom heading the page. Then under each title I summarize in abbreviated form the data I have collected. This enables me to

quickly compare, counterbalance and thus make my diagnosis.

The abbreviated summary of data may look something like this:

Dif. Diag. I. J. C. Miller.
Pain in Epigastrium.
I. Chronic Gastritis.
S. a b c d e f g h
E. G. a b c d e f g h
L. S. a b c d e
H. E. a b c
C. E. a b c

The large cap letters at the beginning of the lines stand for symptoms, examination (physical), laboratory examination, history and course, respectively, data concerning the last two having been elicited from time to time. The small letters represent each a separate diagnostic fact or point under the heading whose initial letter precedes them in script capitals. Plus signs indicate the point to be supporting the diagnosis of the condition named in the particular sub-title under which it stands, while a negative sign counts against the particular diagnosis under consideration. Of course, the value of the different points are not always equal, but a numerical count will show quite accurately the weight of evidence for or against a certain diagnosis.

On my record sheet for the history of past troubles I record data mentioned incidentally by my patient, and also facts brought out by specific inquiry, using sub-headings as on the symptom sheets. The sheets entitled "Course" are merely a continuation under each date patient is seen of the various symptoms with new ones added when they occur.

Treatment given or prescribed is also recorded under appropriate dates in the same form as used in the rest of the case record. The sheets comprising the complete record are kept in a certain order and held together by a paper clip so that new sheets may be inserted into the appropriate places as the case unfolds itself. By comparing results of treatments given one is able to judge somewhat as to its efficiency and thus choose effective methods for future cases.

Keeping the records trains one to be an accurate observer, a careful diagnostician and an efficient therapeutist.

Geo. M. Glassco, D. O,
Rockville, Ind.

## RESEARCH INSTITUTE NEWS

The Women's Osteopathic Club of Chicago redecorated the two front rooms of the upper floor during the summer. Dr. Jenette Bolles, of Denver, was with us during July, and her lectures were most interesting and helpful. It has been decided to move the X-ray machine into the main building. The new location is easily accessible, the quarters are roomy and attractive, and the change will leave an extra room in the laboratory building for the ordinary work there. This extra room will be needed during the present year by the increased number of workers.

Dr. H. L. Collins and Dr. F. M. Nicholson, who have been with the Institute since the beginning, are to devote a part of their time to the work, as they have done in the past. Dr. Collins is doing splendid work in the study of the gastro-intestinal movements in animals with bismuth meals, and under varying manipulations and bony lesions. During this winter Dr. E. R. Hoskins will help in the work done with X-radiance. Dr. Hoskins will carry on some experiments with the pathology and the effects of the bony lesion in animals. Drs. Collins and Hoskins hope to secure some better X-ray plates showing bony lesions in animals and in human subjects. Dr. Collins has already made a good beginning in this line.

Dr. Nicholson will continue his study of the bony lesion in its tissue changes. He will use the material provided by the experiments carried on during the winter.

The preliminary series of tests made upon white rats by Drs. Grace L. Smith, J. H. Edmiston and Louisa Burns are to serve as the basis for work done this year in the study of the lumbar lesions and their effects upon the pelvic and abdominal viscera.

Dr. C. C. Reid, of Denver, gave some excellent practical talks during July. A number of Chicago osteopaths attended his lectures upon diseases of the eye.

The help which has been freely given during the classes by the osteopaths of Chicago is thoroughly appreciated. Dr. Blanche Elfrink, Dr. E. R. Proctor, Dr. E. S. Comstock, Dr. A. A. Gour, all gave freely the results of their experiments. Dr. Farmer and Dr. McConnell gave some technique in an informal way to the class of August.

The sudden necessity for certain work to be given was met by the energy and helpfulness of Dr. Augustus Hollands, who devoted his evenings for two weeks, and his mornings for one week, to giving work in the diseases of the ear, nose and throat.

Dr. Grace L. Smith and Dr. Zuie A. McCorkle will give time to laboratory work this year, as they did last year. To devote a day a week to helping in the laboratories is a big gift from a busy doctor.

Dr. C. R. Atzen, from Omaha, works under considerable disadvantage on account of his

father. Everybody expects so much from Dr. C. B. Atzen's son that Dr. C. R. will have to do several times the good work expected of common people before he receives very much credit for himself. Dr. Atzen has already begun some work in acidosis.

Dr. Jane Slosson, whose report of the movements of leucocytes appeared in the May A. O. A. JOURNAL, will continue this study during the year, and her work will be a part of the study of the effects of bony lesion upon the blood.

"Public Sanitation and Other Papers," a collection of the papers written by Dr. Clement A. Whiting, has met with great praise. It is a book to be placed in libraries, not so much to teach people to have osteopathic treatments as to teach them to live correctly, that is, osteopathically, and to think sanely about their bodies, that is, to think osteopathically about their bodies and the way to treat them. The book carries to humanity a good message from a good friend.

LOUISA BURNS, D. O.

CHICAGO, ILL.

## AN OPINION OF PROF. LANE'S ARTICLE

I was accorded opportunity to read an advance copy of October "Osteopathic Health," being a treatise on "Dr. A. T. Still, Scientist and Reformer," by Prof. M. A. Lane, published by the Osteopathic Publishing Company, Chicago.

On the inside cover page is a brief statement of Prof. Lane's standing and achievements as a scientist, citing the recognition accorded to his discoveries and writings by the foremost scientific bodies and publications of Europe and America, and his association with osteopathic endeavors for several years. This guarantees his authoritative fitness for the task he assumed, and his presentation will, in consequence of his experience and status as a scientist, command confidence and carry conviction.

The argument itself is written in forceful style, links Dr. Still's name incontrovertibly with those of the most eminent therapeutic discoverers and scientists of all ages, and convincingly presents the osteopathic philosophy as a scientific, rational and demonstrable therapeutic procedure.

No more effective campaign literature has ever been offered the osteopathic profession. It will be enjoyed by any person of average intelligence, and especially by those of superior education and understanding. I trust that a million copies will find their way into the hands of the reading public.

O. J. SNYDER, M. S., D. O.

PHILADELPHIA.

## POST TYPHOID PARALYSIS

Geo. McF. Examined 6-22-15. Age 38. Married. Laborer.

*Family History.* Neg.

*Past History.* Trapper 8 years ago. Otherwise neg.

*Present Illness.* Feb., 1915, he was taken to free ward of local City Hospital suffering from typhoid fever. The house physician (M. D., No. 1) was supposed to see the patient and direct his care, the patient's wife tells me that at the end of three weeks when she asked about her husband he did not know of such a case in the hospital. March 1st another house physician (M. D., No. 2) took charge for March and then began treatment of the patient. Patient recovered from the typhoid, but had a few complications. Throat became involved—he could not speak above a whisper and swallowing was very difficult. M. D.'s said that it was nothing and would be all right in a few days. Next, legs and arms became involved, losing much of their sensation (?) and motion. He was told that this paralysis would never improve enough to enable him to walk again. At my examination he could move third and fourth fingers of left hand only. "Clammy" skin, foul breath, constipation. Pulse 65, soft and weak, murmur area of mitral. Urinalysis. Neg. No sugar or albumin.

*Lesions.* Lower dorsal and lumbar posterior and entire spine stiff. Upper dorsal flat. Back muscles "soggy" and congested.

*Diagnosis.* Posttyphoid paralysis.

*Prognosis.* M. D.'s said he would never be able to wait on himself but might live for years. I felt I could help him but offered no opinion as to the time it would take.

*Treatment.* Every other day from June 22 until July 6, then twice a week until Aug. 31, when I sent him to country for two weeks; three treatments in September; last treatment October 11. July 6th he stood alone, and from then on he gained very fast. Mitral murmur had cleared up within the two weeks. Voice was first improvement noted. Six weeks after first treatment he walked to my office and back home, a distance of eleven blocks. October 11 he went to sea as a cook.

I might add that the M. D.'s that treated him and said he would never walk again are the most bitter ones here against osteopathy. They will not speak to either the patient or myself. This, of course, is because their work is for the good of their fellow men (?) and their love for humanity (?).

JOHN M. OGLE, D. O.

MONCTON, N. B.

# STATE AND LOCAL SOCIETIES

CONNECTICUT: The annual meeting of the Connecticut State Society will be held in Hartford, October 28th. Drs. Benjamin Riley and Ralph Underwood, of New Haven, and Caroline Griffin, of Hartford, have arranged an interesting program, outline of which will be given in the next issue.

GEORGIA: The Atlanta Society held its opening meeting of the season on September 4th. Dr. Elizabeth Broach reported "Observations and Experiences at the National Convention," and Dr. M. C. Hardin discussed "The Lesion Theory."

IOWA: The Iowa-Nebraska bi-state meeting will be held in Omaha October 18th at the Fontenelle Hotel, 18th and Douglas Streets. A good program has been arranged and a large attendance is expected.—C. B. ATZEN, D.O., *Program Committee.*

MAINE: The annual meeting of the State Association will be held in Portland September 30th. The day session will be devoted to business of the Association and the evening session to addresses and discussions.

MICHIGAN: The annual meeting of the Michigan Association will be held at Saginaw, October 26th and 27th. A helpful and interesting program has been arranged. Among the speakers will be W. Banks Meacham, of Asheville, N. C., president of the A. O. A., and A. G. Hildreth, president of the Still-Hildreth Sanatorium, Macon, Mo. Bruce L. Hayden, of Saginaw, is the chairman of the Program Committee.

MINNESOTA: The Minnesota Association will hold its annual meeting at West Hotel, Minneapolis, October 6th and 7th, convening at 10.00 A. M. President's address will be presented by F. E. Jorris, Minneapolis, and "Delegates' Report from National Convention," F. D. Parker, St. Paul. "Calculus," E. E. Giltner, Waseca; "Diagnosis Pott's Disease," C. S. Pollock, Minneapolis, followed by business session and luncheon.

Afternoon session will open with demonstrations by exhibitors on balcony, sessions resuming at 2.30 P. M. with "Demonstrations of Bedside Technique for Acute Conditions," by Geo. W. Alexander, Glenwood; Dr. Georgie Borup, St. Paul; Arthur Taylor, Stillwater; Ethel Becker, Preston; Clyde B. Spangler, Albert Lea; J. W. Hawkinson, Luverne. Those present will be guests of the Minneapolis profession for a tour of the boulevards of the city at the afternoon intermission. Annual reception and dinner at West Hotel 7.00 P. M.. E. C. Pickler, Minneapolis, toastmaster.

Second day session. "Diseases of Children," discussed by George M. Laughlin, Kirksville, followed by business session, reports of officers, etc.

Afternoon session: "Neuritis," Gertrude M. Furbush, Minneapolis; "Minor Surgical Technique," A. D. Becker, Minneapolis; "Clinics," discussion and examination, Geo. M. Laughlin, Kirksville.

The following firms have engaged exhibit space: American Barley Flour Co., E. E. Atkinson's Shoe Dept., Benitol Co., Borden's Condensed Milk Co., P. Blakiston's Son & Co., publishers; L. S. Donaldson's Shoe Dept., Ground Gripper Shoe, Lavoris Chemical Co., Lux Co., Northwestern Typewriter Exchange, Standard Medical Supply Co.

MISSOURI: The Central Missouri Association was organized September 8th at Moberly with about 25 representatives from nearby towns in attendance. Officers were elected as follows: President, Del Martz, Moberly; Vice-presidents, Dana L. Weed, Macon, and J. B. Cole, Columbia; Secretary-treasurer, Amy B. Schoonmaker, Macon; Trustees—I. C. Hunervager, Paris; Morris G. Kirk, Moberly; J. A. Barnett, Booneville.

Infantile paralysis and hay fever together with other live topics were discussed. Quarterly meetings will be held, the next meeting in Moberly, December 7th.

THE ST. LOUIS ASSOCIATION held its opening meeting of the year Sept. 19th, opening with a dinner, from 7.00 to 8.00, after which the following program was given:: "The Thyroid Gland—Its Internal Secretion," H. F. Goetz; "Dysmenorrhea," Alfred Edwards; "Osteopathic Obstetrics," J. H. Crenshaw; "Infantile Paraylsis," J. O. Hatten, followed by question box and business session.—W. E. BAILEY, D.O., *Secretary-Treasurer.*

MONTANA: The annual meeting of the Montana Association will be held in Helena, September 28th and 29th. R. M. Wolf, of Big Timber, will discuss "Importance of Inspection of School Children by the Osteopath." Dr. Wolf is the present president and W. C. Dawes, of Bozeman, secretary of the organization. Outline of program and officers elected will be presented in the next issue.

NEBRASKA: The Nebraska Association held its annual meeting in Lincoln, Sept. 13th and 14th. Report of election of officers will be given in the next issue.

Under the auspices of the Nebraska Association T. J. Young, Fremont, maintained a booth of osteopathic literature at the recent State Fair held in that city. He distributed about 5,000 pieces of literature, much of which was sold.

THE STATE ASSOCIATION held its annual meeting at Lincoln, Sept. 13th and 14th. The features of the meeting were the fine talks given by Dr. C. B. Atzen on "The Osteopathic Lesion," and work done by the Research Institute by Dr. F. M. Nicholson, of Chicago.

The following officers were elected: President, P. Y. Gass.; Vice-president, Jennie M. Laird, Omaha; Treasurer, Lulu L. Cramb, Fairbury; Secretary, B. S. Peterson, Omaha. Beatrice was selected for the convention next year.—B. S. PETERSON, *Secretary.*

NEW YORK: The annual meeting of the New York Society will be held at Utica, October 27th and 28th. Among those on the program for the first day are C. P. McConnell, Chicago; F. A. Cave, Boston; C. C. Teall, Fulton. For the second day, W. B. Meacham, Asheville, N. C., president of the A. O. A., Evelyn R. Bush, Louisville, Ky., and A. G. Hildreth, Macon, Mo., will be the speakers.

NEW YORK CITY SOCIETY. held its first meeting of the year September 23d, with J. H. Bailey, of Philadelphia, as guest and chief speaker. Hay fever was the subject of his discussion. Geo. H. Merkley is president and H. Van A. Hillman secretary of the organization. Future meetings of the year will be held at the Murray Hill Hotel, the third Saturday of each month.

Dr. Bailey, of Philadelphia, discussed the experiences of the hay fever clinic he was instrumental in establishing last year and gave most interesting facts regarding the treatment. He pressed the point that those who wished to take up the naso-pharyngeal technique for curing these conditions, should not attempt to do the work until they had made months if not years of preparation for it.

Robt. H. Williams, of Kansas City, was a guest at the meeting and reported the deep impression made upon him by the visit to the hay fever clinic, talking with the patients and witnessing the excursion made to the ragweed fields. The reports were highly satisfactory.

OHIO: The annual meeting of the Ohio Association will be held in Columbus, October 20th and 21st, preceded by the meeting of the Central Ohio Association on the evening previous at the same place. Among the well-known guests to be present are W. Banks Meacham, Asheville,; P. H. Woodall, Birmingham; A. G. Hildreth, Macon, Mo., and F. P. Millard, Toronto.

TORONTO: The Toronto Association will hold its annual meeting in Toronto, October 27th. Among the speakers and distinguished guests to be present will be W. Banks Meacham, Asheville; E. R. Bush, Louisville, Ky.; A. G. Hildreth, Macon, Mo.

# NOTES AND PERSONALS

**Personals:** D. L. Clark, of Denver, has been appointed to the staff of physicians of the United States Reclamation Service. The Service provides medical attention for its employees and it is of interest to the profession that Dr. Clark, whose application was signed as a D. O., went through without any hitch. Possibly it was an oversight, but it is to be hoped that it will stand, and if so it is at least one tardy recognition from the Government.

Edward W. Cleveland, who recently took a year's post-graduate course in the Chicago College of Osteopathy, has passed the State examination and been licensed in New York. He will be loacted in the Press Building, Binghamton. While in Chicago Dr. Cleveland also took a course under Dr. Deason in Catarrhal Deafness Treatment.

Grace Stratton Airey, of Salt Lake City, is a candidate for the legislature on a fusion ticket of Democrats and Progressives. Dr. Airey representing the latter party.

E. E. Tucker, recently of the faculty of the American School, announces his return to private practice and location at 341 Madison Avenue, New York City.

The St. Louis papers recently printed strong letters from Dr. M. A. Crehore, of that city, calling attention to the fact that as medical procedures seem to offer no hope in the treatment of infantile paralysis, osteopathic measures should be investigated in connection with the treatment of this disease.

J. R. Miller, Rome, N. Y., has opened offices in the Kempf Building at Utica, to which he will give a part of his time.

E. C. Armstrong, New Berne, N. C., has received many favorable notices in the papers of his city and section recently on his work with malaria and infantile paralysis.

F. P. Millard's articles on Poliomyelitis have been widely printed the past few weeks by the best papers of several of our largest cities.

Calvert H. Williams, of Kansas City, was in Philadelphia and New York the latter part of September on a business and pleasure trip. Mrs. Williams and their son accompanied him.

**Good Publicity Work:** J. T. Young, of Fremont, Nebr., recently conducted on behalf of the osteopathic association of that State, an osteopathic publicity booth at the State Fair held in Fremont. He reports that much interest was manifested in certain forms of literature which he distributed; particularly he mentions the Osteopathic Magazine. This suggests a line of work which might with profit

be made general at fairs, particularly in rural communities.

**The Macon Sanatorium Report:** This institution's quarterly Bulletin, recently issued, is unusually interesting. It takes up the cases discharged and the cases admitted for the quarter and analyzes the results secured in the discharged cases. It is noteworthy that of the 37 cases discharged about forty-two per cent. are reported as having recovered their normal health and several others had greatly improved. Members of the profession could render themselves and the practice no better service than placing these reports in the hands of leading people in communities, particularly those having charge of municipal and State institutions. Dr. Hildreth will send the Bulletin to those asking for copies for this purpose.

**A Correction:** In reporting the proceedings of the Kansas City meeting in the last issue, it was stated that the change in the Code of Ethics was suggested by Dr. Bancroft, of the New York Society. This was a mistake in that Dr. Bancroft had been appointed a committee by President Snyder to suggest revision of the code and the proposed amendment was made by him in that capacity and not as secretary of the New York Society.

**Good Work With Athletes:** Recent issues of the New York Globe give osteopathy, as administered by E. F. Jeffery, a regular graduate, full credit for many of the successful athletic demonstrations of recent years, including the victory of Willie Ritchie over Welsh. He has also done equally good work for contestants in recent tennis tournaments and his reputation in the Los Angeles Athletic Club is said to be very high.

No doubt many other osteopathic physicians are doing excellent work with professional athletes and if so it will not hurt for the profession to be kept informed. Dr. Charles H. Spencer of Los Angeles, is understood to have a large string of professional baseball men under his care throughout each winter.

**Osteotherapeutics:** The National Association of Osteotherapeutic Practitioners has filed a certificate of incorporation in Jersey City, N. J., the object of which is "To promote social intercourse, good fellowship and closer co-operation among the members." Perhaps they do not contemplate admitting any except those who know it all and those whose technique is perfect, as there is no hint that improvement of professional skill and worth is considered in forming the organization. With the organization, like the "colleges," the fact that it is "regularly incorporated" seems to be the real credential and only object in view.

**For Sale:** Albright treating table and Tycos blood pressure apparatus, both in first class condition. Address S, care A. O. A. Journal, Orange, N. J.

**Practice for Sale:** Will sell good will and aid successor to become established in a splendid Louisiana city. No other osteopath near. Best of reasons for leaving. Address E, care A. O. A. Journal, Orange, N. J.

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**Wanted:** To affiliate as assistant or partner with well established D. O. January 1916 graduate A. S. O., also fourth year June 1916. Laboratory diagnosis specialty. References. Address J, care A. O. A. Journal, Orange, N. J.

**Popular Edition:** The demand from the public for his recent work, "Food Fundamentals," has induced the author to reduce the price of the book from $2.00 to $1.25, plus 10c. for postage. Dozen copies, $1.00 each, f.o.b. Columbus, Ohio. Address, E. H. Bean, D.O., 145 N. High Street, Columbus, Ohio.

**Died:** In Boston, Mass., August 31st, Dr. Kendall L. Achorn, of that city, result of injury in automobile accident.

September 3d, at her home in Iowa City, Ia., of mediastinal tumor, Mrs. James T. Eldon, Sr., mother of Dr. Ellen Herrington, of that city.

At her home in San Bernardino, Calif., Sept. 9th, Mrs. Helen A. C. Parcells, wife of Dr. M. L. Parcells, of that city. Dr. Parcells himself is just recovering from an automobile accident of a few weeks previous, in which he was badly injured.

**Hay Fever Clinic:** This clinic, conducted by Jno. H. Bailey, of Philadelphia, has proved a great success again. He reports about 90 per cent. of favorable results, and what is even more satisfactory the cases treated last summer at the clinic all reported no attack of hay fever this season, or a very mild form which readily yielded to treatment.

The trip to the ragweed fields was made again with about forty hay-fever victims and representatives of the city papers with the same satisfactory results as last year. The papers of Philadelphia give the work splendid publicity and treat it not at all as a joke but as a remarkable scientific and practical accomplishment. The profession is under obligations to Dr. Bailey for the excellent work, which should be followed elsewhere.

**Resolutions on Death of Dr. Achorn:** The New England Osteopathic Association has adopted the following resolutions upon the death of its recent president, Dr. K. L. Achorn:

Whereas, It has pleased the Supreme Ruler of the Universe to enter and remove from our living chain our ex-president Dr. Kendall L. Achorn be it hereby

Resolved, That while we deeply regret the untimely death of our late associate, we bow with humble submission to the will of Him who doeth all things well.

Resolved, That we mourn the loss of a brilliant student and one who was ever ready to work and lend his assitsance to the cause of osteopathy.

Resolved, That this association has lost one

of its most arduous and faithful members and the entire profession a shining star.

Resolved, That we extend to his parents our heartfelt sympathy.

Resolved, That these resolutions be spread upon the records of the association and copies be sent to the parents of our deceased associate and the osteopathic papers for publication.

GEORGE W. GOODE, D.O.,
JOHN J. HOWARD, D.O.,
HELEN G. SHUHAN, D.O.,
Committee on Resolutions.

**Half a Century's Progress**—October, 1916, marks an epoch in the history of Parke, Davis & Co. The house was founded in 1866—just fifty years ago this month—largely upon the optimism of three or four determined men, backed by a capital that would seem insignificant to-day. There was nothing in its unpretentious origin to foretell the success of after years. This success means not merely material prosperity, but also that broader and more enduring success that is based upon good will and confidence. Manufacturing pharmacy was then a crude, imperfect art. Bacteriology, pharmacology and biological pharmacy were as yet unborn. Prophylaxis was in its infancy Standardization was unknown. Fifty years have wrought marvelous changes in means and methods for the treatment of human ills. The knowledge of pathology has immensely broadened. The empiricism of the past has given way to rational therapeutics, which is taking its rightful place among the sciences.

In all these forward movements Parke, Davis & Co. have had some part—notably as inventors of new chemical compounds, as pathfinders and producers in the field of biological manufacture, as investigators in original research, as pioneers in both chemical and physiological standardization. The past half-century has been remarkable in its contributions to the newer curative agencies. The physician's armamentarium will be further enlarged and fortified. New remedial agents will come into being. Many existing products will be improved. And with the fulfillment of these conditions Parke, Davis & Co. (if we may judge the future by the past) are certain to be identified.

## APPLICATIONS FOR MEMBERSHIP

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Hoskins, Earl R. (C.O.P.), 122 So. Ashland Blvd., Chicago.

Moore, Roberta Lee (N), Highland Park.

### Iowa

Opp, Sherman (A), Coakley Bldg., Creston.

### Kansas

Adams, Edw. (A), 200 Chestnut St., Dodge City.

### Missouri

Ellis, Sue E. (A), Commerce Bldg., Kansas City.

### New Jersey

Shinn, Grace Celeste (Ch.), 101 Clifton Ave., Lakewood.

### New York

Hadley, Anna (A), The Graydon, 68 Montague St., Brooklyn.

### Oklahoma

Ownby, Warren D. (A), Broken Arrow.

### Utah

Udall, Pearl (LA), Deseret Gymnasium, Salt Lake City.

### Wisconsin

Plummer, Ella Bissell (A), 208 Lake St., Madison.

### Canada

Evans, Harryette Stephens (A), 619 Sydenham Ave., Westmont, Montreal, Quebec.

## CHANGES OF ADDRESS

Anderson, Carrie Parenteau, from Chicago, Ill., to 326 E. 8th St., Long Beach, Calif.

Arnold, Homer J., from Tampa, Fla., to 1515 W. Monroe St., Chicago, Ill.

Baldwin, B. B., from Kirksville, Mo., to Mendon, Ill.

Bell, De Lano H., from Chatham, Ontario, to 5607 Southern Blvd., Chicago, Ill.

Blair, J. S., from Ward Bldg., to City Bank Bldg., Battle Creek, Mich.

Boggess, Emma Bronk, from San Francisco, to c/o Abbott Mine, Wilbur Springs, Colusa, Co., Calif.

Brandon, Manly A., from Delaware to Lorain, Ohio.

Bricker, Edwin G., from Sterling Bank Bldg., to Somerset Bldg., Winnipeg, Manitoba.

Bush, Ernest W., has returned to Southern Pines, N. C., for the winter.

Byars, W. R., from U. S. Grant Bldg., to Owl Drug Bldg., San Diego, Calif.

Craig, William A., from Grove City, Pa., to 1422 Locust St., Des Moines, Iowa.

Cook, C. F., from 88 to 94 Market St., Poughkeepsie, N. Y.

Cutler, Ben E., Jr., from Des Moines, Iowa, to Sapulpa, Okla.

Fitzgerald, J. Herbert, from Selma to Pine Level, N. C.

Gallagher, Dollie Hunt, from The Vendome Hotel, to 1505 E. 53d St., Chicago, Ill.

Gordon, F. A., from Newton, Ia., to Muller Bldg., Cedar Rapids, Iowa.

Graves, Frances, from 30 Huntington Ave., to 687 Boylston St., Boston, Mass.

Hagan, Frances McKey, from Princeton, Ill., to 1626½ Cheyenne Blvd., Colorado Springs, Colo.

Hawkins, E. W., from Gladstone Bldg., to 204 Broadway, Red Wing, Minn.

Hinds, Ellen M., has opened offices at 139 Mathewson St., Providence, R. I.

Hough, Clara E., from London, England, to The Cambridge, 1030 Spruce St., Philadelphia, Pa.

Kerr, J. A., from Wayne Bldg., to 438 N. Bever, Wooster, Ohio.

Lewis, Agnes, from Farmers State Bank Bldg., to 14½ Fifth Ave., South, St. Cloud, Minn.

McCormick, C. E., from Napa, to Mitau Bldg., Sacramento, Calif.
McNicol, A. M., from Dallas, Oregon, to Dixon Nat. Bank Bldg., Dixon, Ill.
Mahaffy, J. H., from 926 Third St., to 322½ Dakota Ave., Huron, S. D.
Manchester, F. P., from 653 to 829 Avenue C, Bayonne, N. J.
Maxey, C. N., from San Diego, to Colorado and Euclid Ave., Pasadena, Calif.
Maxwell, Bertha M., from 234 to 508 W. 4th St., Williamsport, Pa.
Miller, C. L., from Chicago to Elmhurst, Ill.
Miller, Harry I., from Festus, Mo., to 87 Beechurst Ave., Morgantown, W. Va.
Miller, Joseph Donley, from 87 Beechurst Ave., to Union Utility Bldg., Morgantown, W. Va.
Miller, Lucile Carr from 466 Lafayette St., to 176 Fox St., Aurora, Ill.
Miller, Orion S., from 2819 N. 25th St., to Syndicate Trust Bldg., St. Louis, Mo.
Muncie, Curtis H., from Macon St. and Marcy Ave., to 33 Macon St., cor. Nostrand Ave., Brooklyn, N. Y.
Nielsen, Hans, from 52 Elliott Ave., to "Ha-Ma Lodge," 489 McLean Ave., Yonkers, N. Y.
Noland, Lou T., from Baker Bldg., to Landers Bldg., Springfield, Mo.
Orrison, E. K., from Victoria, Texas, to Elberton, Ga.
Pauls, Peter D., from Mountain Lake to Home Investment Bldg., Albert Lea, Minn.
Perham, Harry L., from Manchester to 14 Center St., Concord, N. H.
Rerucha, V. V., from O'Neill to Box 574, Seward, Neb.
Schwieger, Jas. Scott, from Sun Bldg., to Peoples Nat. Bank Bldg., Jackson, Mich.
Semple, William, from Bangor, Maine, to 16 Mountain Ave., Swampscott, Mass.
Shenton, Lillian P., from 15th and Poplar Sts., to Real Estate Trust Bldg., Philadelphia, Pa., with branch office at Buck Bldg., Phoenixville, Pa.
Simons, John, from Harmony, Pa., to Grangeville, Idaho.
Snare, J. P., from Hurd & Husband Bldg., to Coffee Club Bldg., Modesto, Calif.
Wolfe, A. H., from 102 Wisconsin Bldg., to 1st Nat. Bank Bdg., Neemah, Wis.

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